13 Steps to Manufacturing in China: The Definitive Guide to Opening a Plant, from Site Location to Plant Start Up

Bruce W. Mitchell
13 Steps to Manufacturing in China
13 Steps to Manufacturing in China

The Definitive Guide to Opening a Plant, From Site Location to Plant Start-Up

Bruce W. Mitchell
I dedicate this book to my dear wife, Jenifer, who has endured and continues to endure my many trips away from home and to the other side of the world. I could never have completed this book without her encouragement, patience, and love.
Contents

List of Figures and Tables ix

Introduction 1

Part I  They’re Half a Day Ahead
1. Why the Middle Kingdom? 7
2. 13 Steps to Manufacturing in China 19

Part II  Operating in the Middle Kingdom
3. Where to Locate—China’s Industrial Parks 33
4. Meetings with Other Companies 55
5. Chinese Environmental Regulations 73
6. Utility Costs in China 93
7. Industrial Park Incentives 103
8. Negotiating the Memorandum of Understanding 115
9. Establishing a Company 127

Part III  Those Who Say It Can’t Be Done Should Get out of the Way of Those Doing It
10. Importing Used and New Equipment 143
11. Made in China 163
12. Design Institutes 177
13. Construction Companies 191
14. Constructing the Manufacturing Facility 203
## Contents

### Part IV  Looking Back and Moving Forward

15. A Retrospective: Manufacturing in America and China  221

**Appendix A**  Laws and Resources for Environmental Protection for Xiamen Construction Projects  233

**Appendix B**  Emissions Limits  243

**Appendix C**  Sample Articles of Association  255

**Appendix D**  Application Form for the Company Applying for the Establishment of a Foreign Capital Enterprise  263

**Appendix E**  Sample Contracts  271

**Appendix F**  You’re Not in Kansas Anymore!  339

**Appendix G**  Survey—Recommended Additions to the Next Edition  357

**Notes**  359

**Index**  361
Figures

2.1. The Great Wall of China 20
2.2. Steps on the Great Wall 20
3.1. Suzhou Industrial Park three-dimensional map 34
3.2. Wuxi Industrial Park showroom 35
5.1. Approval Procedure for Environmental-Influence Assessment 78
9.1. Pre-Approval Application of Company Name (Chinese form) 129
10.1. Application for Used Equipment to Be Shipped to China (English and Chinese versions) 150
10.2. Application Form of Pre-shipment Inspection of Used Machinery Importing to China 152
10.3. Operation or Stock Description List of Imported Used Machinery and Electrical Equipment 153
10.4. Pre-Inspection Authorization Letter for Proxy 154
10.5. Introduction of Import Used Machinery and Electrical Equipment’s Production and Work Flow 155
10.6. Corrective-Action Requirements 157
10.7. CCIC North America Inspection Form and Corrective Action Plan 158
11.1. Bridge to Nowhere 174
12.1. How an EPCM Works 182
14.1. Dancing Dragon 217
14.2. The Grand-Opening Celebration 217
F.1. Community-Style Chinese Meal 352

Tables

3.1. Business Visas 42
3.2. Insurance and Health Payments 50
5.1. Project Basics 89
5.2. Energy and Water Usage 90
6.1. Relative Cost of Utilities and Process Gases 102
9.1. Project-Establishment Approval Form
9.2. Guidelines for Total Investment and Minimum Registered Capital
9.3. Energy-Consumption Review
14.1. Construction Permit Requirements
A.1. Terrain-Water Environment
A.2. Maximum Concentration of Industrial-Pollution Releases
A.3. Area, Function, and Quality
A.4. Pollutant-Release Quantity Limits in Haicang Development Park
A.5. Maximum Soot Emissions from Industrial and Residential Boilers
A.6. Production Soot Limits from Industrial Company
A.7. Haicang Industrial Park Area Division and Noise Standards
A.8. Area Divisions and City Noise Standards in dB(A) (GB3096-93)
B.1. Emissions Limits for Selected Pollutants
B.2. Factory Noise Standards in $L_{eq}$ or dB(A)
B.3. Noise Standard in Five Types of Cities in dB(A)
B.4. Standard for Density Limits on Contaminants (form)
E.1. Documents to Be Submitted by Party A to Party B for Design Contract
E.2. Design Documents to Be Submitted by Party B to Party A for Design Contract
E.3. Design-Fee Payment Schedule
E.5. Construction and Design Details
E.6. Construction-Cost Consultancy Signatories
E.7. Parties to the Construction Contract for a Building Project
E.8. Principal and Agent Signatories to Management/Agent Contract
E.9. Employer and Contractor Signatories to Quality-Warranty Letter
My First Trip

My first trip to China was in the fall of 2003. Flying to China you spend a lot of time on the plane, varying from 10 to 16 hours, depending upon where your flight originates in the United States. When sharing my experiences with others about these long flights, I tell them: “You watch several movies, eat three times, read a book, use your laptop, sleep for a while, and you’re still not there!”

My work experience since completing my engineering education some 32 years ago has been in manufacturing operations with responsibilities in reliability and project engineering, environmental, purchasing, maintenance, and tool-and-die design and fabrication. As it turns out, all of these areas came into play in the implementation of a manufacturing plant in China.

That first trip to China was to share equipment and equipment-capacity data as well as to visit with and review the equipment of a prospective Chinese firm we were considering as a potential joint-venture partner. It was in my second trip to China that I began the process of learning how to implement an engineering project in that country. We recognized that it was possible that the joint venture would not work out and that we needed to be prepared to move forward with Plan B, which would entail the creation of a wholly-owned foreign enterprise (WOFE), also known as a wholly foreign-owned enterprise (WFOE).

During that trip, as a management team, we spent time visiting several industrial parks in and around Shanghai, and when top management arrived for final negotiations with our prospective joint-venture partner, I remained in Shanghai to learn not only how to implement a manufacturing-engineering project in China but also to learn all aspects of establishing manufacturing in China. This included the procedures to follow to establish a WFOE and environmental issues as well as those relating to developers, banking, leasing buildings, human relations, design institutes, construction companies, equipment manufacturers, and tool-and-die fabrication shops.

Deciding to Write This Book

After returning to the United States and learning that the joint-venture option was not going to happen, it occurred to me that I should write a book on how to establish a manufacturing plant in China. Two and a half years later and only a year after
signing the lease agreement for a new green-field building with the local developer, we celebrated the grand opening of this facility in China.

I have read several books on doing business in China, including the important issues of understanding the impact of the Chinese culture. Some of these books were quite helpful, so I have included them in my list in appendix F, “You’re Not in Kansas Anymore!” None of them, however, could be considered a how-to book that identifies for the reader the many hurdles that must be overcome in implementing manufacturing in China. Believe me, if I had been able to locate such a book, it would have made this process much easier!

The Organization of the Book

The book is divided up into four parts. Part I provides a basis for deciding if you should establish manufacturing in China. It presents the positives and negatives of such a move as well as an overview of all the steps that you must follow to get there.

Part II concerns what you need to know and what you have to do before you can remove the first shovelful of dirt to construct a manufacturing plant: deciding where to locate, discovering what other companies have done, determining environmental concerns and utility costs, and establishing a foreign-investment company.

Part III provides the necessary details in order to construct a building, source new equipment from China or import used equipment from the United States, evaluate design institutes and construction companies, and finally, actually constructing your building from obtaining a work permit (not simple!) to the building installation itself.

Part IV assesses the entire process in perspective, summarizing what was learned, encouraging readers to evaluate their current business position and explore the possibility of establishing manufacturing operations in China, and ends with the author’s perspective on the question of “What can be done to increase manufacturing in the United States?”

By the time you read this book, you will have a detailed understanding of the steps required to establish manufacturing operations in China.

The Audience

This book was written for manufacturing chief executives, board members, and owners/entrepreneurs of all sizes of companies, who are evaluating or have active plans to establish manufacturing operations in China. Manufacturing and engineering executives tasked with developing plans, schedules, and budgets necessary to implement manufacturing operations in China will also find this book an invaluable tool and road map to manufacturing in China.

Consulting businesses may have a significant interest in this text. A few years ago, I mentioned to a consultant who specializes in operations in China that I was considering writing a book about our experiences and what we learned implementing this process. He jokingly asked me not to publish such a book, because it would infringe upon his business. Manufacturing chief executives, board members, and owners/entrepreneurs will be motivated by a desire to understand what is involved,
Introduction

what it might cost, and what are the advantages and disadvantage of establishing a manufacturing operation in China.

This book could be utilized as a text within a business curriculum in undergraduate, graduate, or continuing education.

Interested readers will gain an understanding of how capitalism and communism coexist in China and the impact of the communist leadership on doing business in China. It is noteworthy that the strength of the government is not in Beijing but in the local municipalities.

Finally, 13 Steps to Manufacturing in China will appeal to a wider reading audience. The general public may consider it a valuable addition to the growing library of reference material for understanding the Chinese people, their ancient culture, and how that culture has shaped the way that companies must do business in China. This is a timely subject as this behemoth nation of China continues to increase its stature on the world stage.

My book is aimed at anyone who wants to learn more about China and how it has become the world’s manufacturer. It provides another dimension of the culture and people for those interested in a further understanding of the Middle Kingdom.

The Rewards

The journey down the road, and indeed, what seems like scaling the Great Wall that is China, to begin our manufacturing operations has been a challenging and arduous at times. But it has also been a rewarding experience to have established a successful manufacturing facility, while at the same time, having the privilege of working in a foreign country and culture, and negotiating with a foreign government while getting to know and understand the Chinese people I have met and worked with along the way.

A Chinese proverb advises: “When someone shares something of value with you, and you benefit from it, you have a moral obligation to share it with others.” Through my experiences in establishing a manufacturing operation in China, I have learned many things of value from the Chinese, other foreign investors, and from going through this process. So it is my desire to share what I believe to be of value with others who may be contemplating a manufacturing operation in China.
**Part I**

**They’re Half a Day Ahead**

Part I provides the basis for deciding to establish manufacturing in China. It presents the positives and negatives of such a move and an overview of all the steps that must be followed.
Chapter 1

Why the Middle Kingdom?

A Chinese proverb goes something like this: “To guess is cheap, to guess wrong is expensive.” It seems appropriate to begin this text with a discussion of the potential benefits of establishing manufacturing operations in China along with the associated risks. It has been written to assist companies in their decision-making process and is based on the facts, thereby eliminating the need to guess and avoiding the high costs of incorrect guesses.

Perhaps your company is at the tipping point and experiencing a scenario something like this:

A Not Uncommon Scenario

A company with manufacturing operations in the United States continues to experience skyrocketing operating costs, which may be the result of high labor costs brought about by multi-year aggressive bargaining unit agreements, increases in the cost of raw materials, and/or the high cost of capital equipment. The management team may have applied the principles of lean, six-sigma, and/or total productive maintenance but still have been unable to cut costs sufficiently to be competitive. On top of all this, they may also be struggling to provide competitive pricing and short delivery times to their customers in Asia. Or they may have had to make a significant investment in inventory and warehousing costs in Asia to try to improve their delivery times but must maintain stock that may or may not be what customers are demanding.

The company’s board of directors may be witnessing more and more of its competition relocating to Asia, reducing costs and taking away business. The company’s owners or investors would like to continue operations in the United States, providing good paying jobs to its employees, but they are strapped with high manufacturing costs and are unable to offer product pricing comparable to those of their competition in Asia.

Their thought process may also be influenced by what they read in the media. “The China Price [italics added] is the three scariest words in U.S. industry…has been a big factor in the loss of 2.7 million manufacturing jobs since 2000.”

In *Grant Thornton LLP’s Analysis of China Operations*, referring to those who have established operations in China: “earned an impressive 50 percent median return on invested capital (ROIC) in 2007…nearly three times higher than the median ROIC in U.S. plants…most China plants post excellent returns relative to U.S. plants…plant floors in…mainland China represents substantial cost savings for many North American manufacturers.” The Thornton Analysis then lists the following areas that companies should evaluate as part of their decision-making process on whether to expand operations to China:

**Total Costs:** Do you really understand the total cost of doing business in China…?

**Risks and intangibles:** What are you risking by going to China with sourcing and/or selling goods? Intellectual property, proprietary processes…

**Business environment:** Do you fully understand the Chinese legal, regulatory, and reporting environment?

So with a dwindling bottom line and the realities of China, the decision may come down to one of two options. The first option is to close the company’s doors, liquidate all of their equipment and buildings, and eliminate all employee positions. The second option is to assess moving operations to Asia and maintain some jobs, such as administrative, engineering, research and development, purchasing, and sales, in the United States that are necessary to support ongoing operations in Asia. By keeping the company in operation, it can also continue to provide a return for investors.

Assuming the company owner, board of directors, or executive committee are not ready to close down all operations, they make the decision to investigate manufacturing in China. But how do you go about doing this? Where do you start? China is 12 to 13 hours ahead of the Eastern time zone (China has only one time zone and no daylight savings time), it has a very different and ancient history, language, and culture, and on top of that, it is a communist country. What are the steps? What might it all cost? What resources will be required? What are the risks? Will it truly “save” our company? Is this something our company is ready to do?

That’s the purpose of this reference book, to supply the answers to these questions. This chapter is divided into two sections. The first section identifies the actual and/or potential benefits of moving manufacturing to China. The second section identifies the potential disadvantages and risks of such a move. These lists should be applied specifically to your company to help answer the questions: “Is moving manufacturing to China the right answer for my company?” The answer to this question will not be the same for everyone, and China may not necessarily be for everyone.

**Potential Benefits**

A. *Proximity to customers:* One reason that you may want to consider locating operations in China is to be close to your market. A large portion of your market may be moving to or expanding in China.

1. One option is to lease a warehouse in Hong Kong so that parts are more readily available for your customers in Asia. As a result, your delivery times
will be improved significantly over the time to manufacture your product to order in the United States and then adding three to six weeks of shipping time for delivering the product to the customer in Asia.

2. However, maintaining inventory in a warehouse can be a challenge trying to predict what your customers will be purchasing. The cost of renting warehouse space and a service to receive and disburse your product is also expensive in Hong Kong. You may end up with a sizeable investment of inventory, some of which you may not be able to sell for some time. It also takes up space that you are renting and has a significant value just sitting on your books. You may find it necessary to have to have “fire sales” periodically to liquidate the slow or nonmoving inventory, or if there are no buyers, scrap the unsold product and expense the losses.

3. Establishing a warehouse can also be a benefit by establishing a presence in Asia closer to your growing Asian market. Having a presence locates you closer to your customers, which can have a positive result. Establishing operations in China is a better solution; however, as you can then, utilizing lean manufacturing principles, sell your product based on demand and the specific parts requested by your customers. This will reduce costs by eliminating shipping the product from the United States to Asia and reducing the delivery time significantly. It reduces your inventory requirements, and thereby, improves the bottom line. There is still a benefit to maintaining a warehouse for stocking more popular parts and as a distribution point for your product.

B. Existing customer interest. There are intangibles as well. Your customers may be encouraging, or in some cases almost demanding, that you establish operations there. They like your quality products and want to purchase them, but they don’t want to pay the higher prices associated with producing the parts in the United States. Delivery of your product can be an issue with your Asian customers. Once you make the commitment, they will also anticipate lower pricing and faster delivery. You may even be forced to reduce pricing in advance of having the operation fully qualified for manufacturing in China.

C. Invite existing Asian customers to the new plant. After you have established operations in China, you can then invite your existing Asian customers to your plant, which will have a positive impact on your sales as they recognize that you do in fact have a physical presence and are actually manufacturing products in China, or as it is said in China, “You are real.”

D. Attract new customers. With an operation in China, you can also more readily identify and invite potential new customers that would never have been able to visit your operations in the United States, let alone even learn of its existence. In parallel with recognizing the need for manufacturing in China, it is also important to establish an on-the-ground native sales force that can introduce your product to new customers. Having an actual manufacturing facility in China will enable you to make inroads with new customers that cannot be done otherwise. This, in combination with hiring Chinese sales and other pertinent supporting staff (application engineers, etc.), will enable
you to go beyond the use of distributors by having an actual sales staff to meet with and provide information to customers on your product and how it can meet their requirements. Now would also be the time to expand your Internet presence with a Chinese-language web page.

E. Market potential. Let’s face it, where else can you find a potential market the size of the population of China? In a white paper published in late 2008, Messe Munchen International noted the following:
1. “China is the dominant country today, in terms of activities and chemistries. We have moved production of equipment to China.”
2. “Of the 10 wealthiest companies, five are located in China.”
3. “China is a big global market. The market will continue to increase due to the sheer number of people in China—their standard of living is constantly increasing.”
4. “China is still the factory of the world.”
5. “Strictly speaking, low direct manufacturing cost is no longer the correct metric to evaluate the desirability of an electronics facility location. Now that China… consumes a significant portion of their manufactured goods, local consumption needs to be taken into account.”

If you have a good product to sell to your customer it isn’t just a matter of lowering your operating costs, but it can also present an opportunity to significantly increase both existing and new customer sales as you penetrate and grow your market share in this most populous (and growing) country in the world.

F. Operational costs. Yes, there are opportunities to reduce production costs. This is one of the main factors that is typically publicized when a discussion of manufacturing in China is the topic. There are many cost elements that add up to your total manufacturing costs. I have listed below some of these costs where there may be opportunities for savings. It is not all-inclusive because your industry may have additional factors.

1. Labor. If you are in a highly labor-intensive industry, you have the opportunity to significantly reduce costs compared to labor costs in the United States. Salaries for technical and management personnel are significantly lower and labor rates for hourly positions are almost negligible to your bottom line. You should recognize that this benefit is not going to last forever as China continues to improve its infrastructure and the Chinese people improve their lifestyle; nevertheless, it will likely still be to your advantage to consider China for the near term, which I would project to be for at least the next 10 to 15 years. The Chinese government may continue to keep wages and the value of the Chinese currency down as they recognize that this is one of the contributing factors to their attracting industry from around the world. If you want to be on the cutting edge, you could consider investing in India, Vietnam, or South Africa, but there are significant obstacles there, which are beyond the scope of this book.
2. Raw materials and supplies. The opportunity to reduce material costs depends significantly on your raw material requirements. You naturally
cannot anticipate savings on commodity types of materials, like nickel and copper, whose costs are determined globally. You may, however, be able to save significantly on other raw material costs or items manufactured in China that do have lower costs. Examples could include packaging and coating materials. One of the biggest challenges, however, is locating and then qualifying a reliable supplier. With the international requirements on chemicals in materials as prescribed by ROHS, REACH, and specific customers, you will need to be able to keep your supplier honest by testing or having the products tested to ensure that they have not changed the chemicals or concentrations in the materials. Don’t count on being provided with an accurate MSDS, if you are even provided with anything at all. If your raw materials have special properties to meet your manufacturing requirements, shipments should be inspected periodically through your quality-control department.

3. Semifinished goods suppliers. You may be able to find an existing company in China that can supply value-added materials that you can use to complete the manufacture in fewer steps than if you manufactured the product starting with raw materials. That said you should also be aware that, importing raw materials or semifinished parts into China will incur customs charges of 2 to 4 percent that cannot be recovered. These customs charges can be avoided if you purchase the materials from a Chinese supplier. The price to purchase semifinished goods from a Chinese supplier may also be less costly than for you to manufacture them. As a result, this can lead to reduced capital investment, as you will not need to purchase and install the equipment yourself. Be careful, however, not to place all of your eggs in one basket, because there is no guarantee this company will be able to maintain consistent levels of quality and/or capacity. Also recognize that they could also decide to sell their product to a competitor and cut off your supply completely.

4. Equipment. Rosemary Coates in her book 42 Rules for Sourcing and Manufacturing in China notes: “In a recessionary environment, manufacturers look for cost savings in their organizations... Chinese vendors can save you up to 85 percent of your domestic costs.” My experiences purchasing equipment in China is that manufactured equipment can be as little as one-third of Western-supplied equipment. Be aware, however, that if you work with a vendor to build unique equipment that the vendor may turn around and sell it to your competition. Other equipment, such as instrumentation, hydraulic valves and motors that are manufactured in China are currently not equivalent to the quality of those produced in North American or Europe. And, in some cases, you may not be able to locate comparable equipment in China. This will require that you either ship existing equipment from your current Western operations or purchase the equipment new in the United States and then ship it to China. The procedures for relocating existing equipment and sourcing new equipment in China are discussed thoroughly in chapters 10 and 11, respectively. There may be an opportunity to save significant equipment costs, but it is also a
buyer-beware market in China because not all equipment is created equal, and in some cases, you will get what you pay for. You should research your equipment sources thoroughly before proceeding.

5. **Taxes.** In a 2008 white paper “The Tide Is Turning,” the authors point out that “High corporate tax rates continue to be the single most significant drag on manufacturing cost competitiveness. . . . In a recent detailed analysis of the issue, the United States has been falling behind by standing in place . . . the U.S. federal-state rate has been essentially unchanged at 39 percent, while other countries have been aggressively cutting rates.” China’s tax rate is currently 25 percent, which is 15 percent lower than the United States.

Taxation in China is more complicated than that statement, and it may not be a true justification for you. Currently, U.S. companies can use income earned in China and reinvest it in the operations without tax implications in the United States. In the United States, of course, the existing rules for taxing companies operating in foreign countries are subject to change. Depending upon which political party occupies the White House and Congress, that may determine the types of changes that will be implemented. There are numerous options for foreign companies to invest in China and methods they can use to report taxable income, but that discussion is beyond the scope of this book. You should hire an established, knowledgeable accounting firm with Asian experience to determine what is best for your company, which will create a tax-efficient structure to maximize the value of your company’s investment.

6. **Environmental costs.** One could argue that these costs don’t fit into the advantage category, but I have chosen to include them. The environmental climate in China is not less challenging than in the United States, it is just different.
   1. There are costs associated with hiring an environmental consultant to generate the environmental assessment plus any modifications to your equipment to meet the requirements.
   2. The maximum emission levels for air, water, solid waste, and noise have some similarity with the regulatory requirements in the United States, but there are also major differences. For example, air emissions are regulated by the density of the pollutant and the flow rate per stack at a given stack height. There are no regulations limiting your total annual air emissions for VOCs as long as you meet the individual stack requirements.
   3. There is an extensive report that must filled out each year that asks for data on the number of employees and your sales, energy costs, pollution-abatement, and other costs for the preceding year with associated penalties if you are caught cheating or exceeding limits on your actual air, water, and solid-waste reporting, as well as safety requirements.
   4. The Chinese also tend to congregate companies with high-emission levels in more out-of-the-way locations. Chapter 5 provides a detailed discussion of the environmental regulatory climate in China.

H. **Management objective.** You may also be receiving encouragement from top management (the CEO, the board of directors, stockholders, etc.) to establish
some level of manufacturing in China. One would hope that this is not occurring because of the attitude of “everyone else is doing it.” There is likely considerable trepidation from top management taking such a large step from a position of comfort in manufacturing in the United States, and knowing what it takes to be successful, to moving operations to the other side of the world where the language, culture, and government are so different.

**Potential Disadvantages and Risks**

Now let’s review some of the potential downsides that should be considered before taking a journey down the road to manufacturing in China. These should be weighed against the advantages noted previously, along with the other information contained in this text.

A. *Utility and process gas costs.* Since you may be thinking that your costs will be less in China, would you expect the utility and process costs to also be less? This is typically not the case, and you should include this in your due diligence when evaluating potential locations.

1. *Electricity.* The cost of electricity is significantly higher in China with several hidden costs that you should be aware of in their billing structure. You could end up paying two to three times more for power than in the United States. The Chinese electrical utilities charge by the kilowatt-hour, as in the United States, but they charge different rates based on different times of the day. They also may not utilize measured demand, but rather, they could charge you for connected demand whether you use it or not. The reliability of the power supply can also be an issue. These issues are discussed in more detail in chapter 6.

2. *Natural gas/LPG.* Natural-gas costs can also be significantly higher in China. Natural gas is also not readily available in all locations in China, so you may have to substitute LPG. These costs are discussed in chapter 6.

3. *Process gases.* Process gases, like nitrogen and hydrogen, are also higher in cost in China than in the United States. Since electricity is involved in their respective processes, the added costs for power likely more than outweigh any labor savings. Chapter 6 includes information on process gases.

B. *Land.* You cannot actually own property in China. You are only able to purchase the “right” to operate on the land for a 50-year period.

1. Be sure to find whether the location you are considering has requirements for a certain percentage of your land to be a “green zone.” This percentage can be up to 33 percent or more, resulting in the need to purchase more property than necessary. Over time, the requirements for a minimum green area have been relaxed. It is still possible that certain areas may still have this requirement.

2. Some locations in China create more land mass along the coast by cutting down nearby mountains to use as fill for former swampy areas, shrimp farms, agricultural areas, and the like. If your proposed location has been developed in this manner, it could add to the construction costs with
additional foundation requirements, including pilings for not only your building and equipment, but possibly the roads on your property, too.

In one of the industrial parks in Shanghai, a horizontal rod was installed on the outside of the building so that the owner could track the height of the rod compared to the ground level, so that they would be aware if the building was sinking.

Companies should do their best at due diligence when entering into land agreements with the government. One company had a land agreement in place and a $100-million-plus plant finished and operating for one year when the government officials told the company it would have to relocate the plant because the city was expanding and the land was too valuable and would no longer be zoned for industry. The industrial park itself and its tenant had to relocate. In another situation, the local government was interested in focusing the city on tourism and not on industrial development, so they encouraged companies to relocate out of the city.

C. Intellectual property risks. Patents can also create obstacles to doing business in China. You don’t need to be reading this book to know that there continues to be challenges with copies and knockoffs in China. This could be anything from DVDs, watches, and purses to big-ticket items, like software and manufacturing equipment. In my travels in China, I have heard stories where the company manufactures a name-brand product for two shifts a day and on the third shift, the workers produced and sold the same product for much less. If you have a manufacturing advantage over the competition in your industry based on a process that you have developed that is known only to your company, be careful. Your employees may share that information with your competition while still working for you or after they quit your company, or they may even start up their own company to make the same thing. Depending upon your business, intellectual-property risks should be taken into serious consideration. There are no secrets in China!

D. Legal issues. China is nothing like the United States when it comes to litigation. There is much less when compared with the West. Your first reaction to this might be favorable, based on the fact the United States has become extremely litigious with ambulance chasers, malpractice suits, and you name it. Such lawsuits have been responsible for increasing the cost of medical care and motivating physicians to move out of states where the costs of malpractice suits have skyrocketed. This is not the case in China. And don’t hold your breath, because this is not necessarily an advantage.

There is no independent bar association and resolution of any legal issues can be challenging if you are dealing with the government. You should have any contracts reviewed by consultants familiar with Chinese contracts, as there are ways available to resolve conflicts.

E. Training expense. To effectively train key supervisory personnel on how to operate the equipment, the new plant’s operators may have to fly from China to the U.S. for a training period of several weeks. Obtaining a visa for them
to come to the U.S. can sometimes be a challenge, especially if they are not married, have children, or don’t own a house, etc.

F. Travel expenses. The cost of flights to and from China from the United States can add up over time as key personnel from the project team make periodic visits to China from the initial investigations to follow-up visits after the plant is running. The long trip to and from China requires a total average travel time of three days when key personnel are not in the office.

G. The Chinese government. Why would the government be a disadvantage, you might ask? It will be critical to your success to get to know and develop a relationship with the local Chinese government. They can make your job easier or harder, depending upon on how good that relationship is. Once you have developed a positive relationship, you need to maintain that relationship, which is best done by your local general manager. He can always be presented as the “good cop,” and you can bring your personnel in from the West to be the “bad cop” for the resolution of issues. If you get on the wrong side of the government, it can seriously hamper your operations.

H. Employee attrition. Although the current wages in China are very low compared with the West, employee attrition can be a challenge in China. As each new company comes into a development zone, the employees are not bashful about trying to increase their income by switching jobs. I have heard of people interviewed that have made eight job changes in 15 years! Be aware of what other companies in the area are paying, and ensure that your good personnel are being paid well because Chinese employees will readily move from one company to the next if they can get an increase in pay and more responsibility. Typically, Chinese employees sign a contract with the company, which is usually good for one year. Turnover in the labor force particularly can occur after the long Chinese holidays, like the Chinese New Year’s celebration. Companies report losing between 10 percent and 20 percent of the workforce; they stay at home and don’t come back.

I. Language and cultural barriers. One could probably write an entire book on this subject, but communication is critical in any and all business dealings. You need to understand that it is different in China, and it is just not the language. Yes, you have a very difficult language to learn, or you need to find not only qualified, but trustworthy employees for your key positions, and these employees must have good English skills both writing and speaking to ensure that you can communicate technical, legal, and other business-related topics.

The communication issue is not just with other Chinese companies but for intra-company discussions as well. An ex-pat general manager, who had previously lived in the United States for 17 years, related that one of the most difficult challenges he had while working for his company was his translation skills. If you think of it, this can be a significant pressure on your manager because you are making decisions based on how he interprets what others are saying in Chinese. Needless to say, this person must be trustworthy beyond reproach to make sure that he is correctly telling you what is being said and not what he wants you to hear or perhaps what he thinks you want to hear.
The communication culture is much different from the West, as we Westerners are typically more direct in our questions and responses (subject to any open legal issues). In China, you will likely find that you may ask a simple yes-or-no question (at least that is what you thought), and it is then relayed in Chinese and they may talk for several minutes before you receive an answer. Also, “no” doesn’t always mean “no,” and “yes” doesn’t always mean “yes.” There are issues of losing face that can impact on their response. That is why you may frequently hear them say “no problem.” But beware; that might not be the entire story, as you may learn later. You should utilize your general manager to be able to provide the appropriate cultural translation in numerous meetings with the Chinese.

J. Hidden or extra costs. With the large Chinese population, it is difficult for China to find jobs for all their people. It has been my observation that this has created the mentality of creating jobs. In the United States, there may be only one person or group performing a task, while in China, the responsibilities are broken up into several parts so that there are more jobs to go around. There is also a tendency to not try to reduce jobs by automation or other equipment that can perform the job with a single operator or no operator at all. As a result, there is a lot of manual labor performed, and they use many people to complete the jobs. You see this at the airports; there may be up to four people at the gate when you are boarding the plane. The first person looks at the ticket, a second person may look at it again and mark it, a third person tears off the stub and hands it to you, and a fourth person may just be looking again just before you enter the airplane. This last person may be a security person dressed in a uniform just before you enter the plane. I have seen this when they were doing work on the road. During several trips I made one year, they were in the process of repaving a bridge. Rather than have special equipment that would likely strip the old asphalt off the road in one day, they had ten or fifteen people with a long-handled tool that they used to manually remove the asphalt. So, what is the impact on your costs from a cultural environment designed to create rather than eliminate jobs? When you are implementing a building project, there are numerous consultants that the government requires you to hire. You will need an approved design institute to perform the engineering design. You will need to hire a tendering company to develop the cost estimate for your project. You will need to hire a supervisory company to oversee construction, whether you have your own team there or not. Chapter 14 covers in great detail the information on new project construction and the many requirements for obtaining a construction permit.

K. Proximity to customers. Yes, this was listed as a possible advantage earlier, but this may not be the case if, in fact, the majority of your customers are located in the United States or Europe and you have to incur the costs of shipping products back along with potential warehousing costs and product-delivery delays. Because of increases in shipping costs, some companies have been relocating operations back to the United States.

L. Safety. You need to be very diligent in enforcing safety rules because the Chinese are not as safety-conscious as employees are in the West. They have
a very can-do attitude, but this sometimes results in their taking shortcuts, which can be dangerous to their health and to the health and safety of others. This will be a constant battle for you, and it is important that you emphasize this with employees frequently.

M. Currency. At the time of the writing of this book, the exchange rate was 6.2 RMB per USD. When I first started going to China seven years ago, the exchange rate was in excess of 8.0 RMB per USD. So, along with any devaluation of the dollar, any long-term contracts (building lease, land “purchase,” etc.) or utility costs paid in RMB will continue to increase in U.S. dollars as the exchange rate becomes lower. If possible, try to negotiate contracts in U.S. dollars. You will likely find that difficult to do for the same reason that you don’t want to pay in RMB, the Chinese would not want to have you pay in U.S. dollars as the value of the Chinese RMB increases and they are getting less for their rent.

N. Importing used equipment. You may want to consider supplying most of your equipment from the United States for an initial pilot operation since you know it can produce the product according to specification. If you are considering that option (which I recommend), be aware that there are additional costs besides just crating and shipping the equipment to the Chinese destination. You will incur clean-up costs and inspection costs that can be in the thousands of dollars in order to meet the Chinese customs requirements. The Chinese government also restricts importation of certain equipment, so you may not even be able to ship it to China. All of the necessary details on these procedures and associated costs are included in chapter 10.

O. Manufacturing quality. Unless you live the life of a hermit (which makes you an unlikely candidate for this book!), you have heard of the many problems with products manufactured in China, whether lead-based paints on toys, contaminated baby formula, etc. Based on these stories and others, you may have great concerns regarding whether there will be insurmountable challenges with quality in China. Since this book is about establishing your own manufacturing operation under your control and not outsourcing, you have the opportunity to ensure product quality by getting ISO-certified, using the Toyota Production System (TPS), etc. If you hire the right people with the necessary skills, including the general manager, the Chinese are as interested if not more interested, in producing the highest quality part at the lowest cost. Make sure that you have strict controls over changes to the process; in their desire to improve the operation or take shortcuts, they may decide to experiment on their own with new processes or procedures that could be detrimental to the operations or create environmental or safety hazards.

P. Accounting issues. Two accounting-related issues where a consultant is paramount are transfer pricing and tax compliance. Both of these topics are beyond the scope of this text. There are various forms, reporting requirements, pricing audits, and related penalties for not meeting the requirements.

You may also think of several other issues that impact your decision to move manufacturing operations to China that may be unique to your operations.
CLOSING COMMENTS

As appropriately noted in “The Hidden Dragons”: “What multinational doesn’t want a piece of the action in China—with 1.3 billion potential customers, 9.3 percent annual economic growth, and a per capita income that quadruples yearly? Carried away by these figures—along with the Chinese workforce’s low wages—most multinationals have rushed to set up manufacturing facilities in China or sell products there.”

Is it time to consider rushing to manufacture in China? Don’t decide yet; keep reading because there is so much more to learn. Chapter 2 introduces the 13 steps to establish a manufacturing operation in China.
After reading the previous chapter, you may have decided that establishing manufacturing in China is something worth further investigation. This chapter outlines the specific procedures for establishing manufacturing operations in China.

The Great Wall

For those who have been to the Great Wall of China or have seen it on television or in pictures in books, you know that it is very high as it climbs over the ridges of tall mountains while weaving its way through a 5,000-mile trek in China (figure 2.1). Depending on the portion of the wall, there can be many, many steps, or in some cases, the wall runs fairly horizontal with level areas or areas like ramps rather than steps. In some locations, it is claimed that there are as many as 28,000 steps to climb to reach the top of a particularly high portion of the wall. I can attest to this, as I have personally climbed the Great Wall. The steps can vary in height from six inches to as high as two feet, and they all must be climbed to reach the top of the wall (figure 2.2).

Once you get to the top of a high section of the wall, the view is amazing. You will feel a sense of accomplishment that you decided to make the climb after all. The Chinese say that when you have climbed the wall, you are a “real man” or a “hero,” but in the same breath, they say, “You are a fool since once you have reached the top, there is nothing there for you!” There can be a great benefit establishing a manufacturing operation in China or figuratively reaching the top of the wall because it can enable your company to stay in business, and the view from the boardroom is much better!

Climbing the Great Wall of China, metaphorically speaking, describes the process that you will follow when establishing manufacturing in China. From a distance, the goal may seem insurmountable. After all, China is on the other side of the world, 14 to 15 hours ahead of you (if you work on the East Coast), there is entirely different language and culture, and it has a communist form of government. There were many steps to reach “the top.” Some of the steps may not be too difficult to climb, while others can be very hard and require a significant effort.
The Western companies in the 1990s who initially moved into China did this mostly via joint ventures. The idea of a joint venture may have added a level of comfort for management when considering establishing operations in a totally different country with a totally different language, culture, and government. A Chinese partner who already knows the ropes could provide guidance working with them when establishing operations.
Joint ventures used to be the only option for Western companies until China opened the door for the establishment of independent or foreign-investment entities. Joint ventures were a good approach for some companies. Why might a joint venture not work for you? You may find that the other party only wants everything you have and doesn’t want to give you anything. So you will not be willing to sell out to them. There are many other reasons, including lack of synergy, merging a Chinese and U.S. company, and so on. In some cases today, they are still a good choice, but for the majority of others, going it alone is the better option.

As noted earlier, this chapter includes an overview of each of the major project steps necessary to establish a manufacturing operation in China (to scale your own Great Wall of China). I chose to break down the entire process into thirteen steps. Thirteen is usually considered an unlucky number for the superstitious in the United States. High-rise hotels sometimes do not have a 13th floor and Friday the 13th is frequently associated with bad fortune.

What about China? Is it an unlucky number there, too? No, it turns out that the digit one when positioned in tens sounds like the word definite (shì) in Mandarin, and the digit three sounds like “life, living,” or “birth.” As a result, the number 13, which is pronounced “SHISAN” in Mandarin, can mean “definitely vibrant” or “assured growth.” As a result, in China the number 13 is considered a lucky number. Since this is a book about China, it seems apropos to present the procedures in thirteen steps, and following them should lead the reader to the promised “assured growth” in China.

The Steps

Here are the thirteen steps to manufacturing in China.

**Step 1.** Establish Project Teams.

**Step 2.** Identify Potential Locations.

**Step 3.** Identify Industrial Park Incentives.

**Step 4.** Meet with Other Companies.

**Step 5.** Learn the Environmental Regulations.

**Step 6.** Select Desired Location and Negotiate the Memorandum of Understanding.

**Step 7.** Establish Your Company.

**Step 8.** Import Used Manufacturing Equipment.

**Step 9.** Source Chinese Equipment.

**Step 10.** Select a Design Institute.

**Step 11.** Evaluate and Select a Construction Company.

**Step 12.** Construct the Manufacturing Plant.

**Step 13.** Hire Plant Staff.

Even though the steps are numbered sequentially, each step is not necessarily a predecessor for the next step. Some steps can and should be implemented in parallel with other steps. For example, at the same time that you are evaluating potential locations, you should be identifying potential equipment and raw-material
suppliers, discussing the experiences of other companies that have operations in China (even if they are not in the same industrial park that you may select), meeting with the local environmental bureau, design institutes, construction companies, etc. Let’s now proceed with a review of each of the thirteen steps.

**Scaling the Great Wall**

**Step 1. Establish Project Teams**

*The Executive Team*

Consider utilizing two teams to implement manufacturing in China. The initial team should be the executive team, including the company president and chief executive officer, division president, corporate council, chief financial officer, vice president of marketing, the vice president of manufacturing, and the vice president of engineering.

The executive management team’s responsibility is to review potential sites for the manufacturing operation and then decide which to choose from. During this process, you will meet with the officials of the development zones. This information should be well documented to assist in making your decision. In chapter 3, you will be able to anticipate typical discussions you may experience in the industrial zones that you visit.

*Consultants*

Contract with quality, well-known, and established (Read high priced!) consultants that operate in China to make sure that you are receiving the correct advice. They should be involved from the very beginning and, where feasible, participate in the initial meetings.

Although this text identifies all of the procedures, keep in mind that the laws in China are in a constant state of flux. It cannot be overemphasized that you must hire qualified consultants when establishing operations in China so that you have the most up-to-date information.

*General Manager*

Identify and hire as soon as possible an ex-pat as your general manager. He or she will quickly become a valuable part of the new team having been born, raised, and worked in China prior to coming to the United States. Having grown up in China, the general manager will understand the local Chinese culture and people.

Get your general manager immediately involved by having him spend time in existing manufacturing plants in the United States to gain knowledge of the equipment and manufacturing processes. He or she should also participate in the process of locating equipment suppliers in China. Have him or her accompany you and other members of your engineering department as well as manufacturing personnel on visits to the Chinese equipment companies. In this way, the general manager will not only serve as your translator, but more importantly, it will enable him or her to start learning about the type of equipment that you use in the manufacturing
Top Management Involvement

I should mention at this point that you cannot underestimate the benefits of having your company chairman and division president totally involved in all the initial stages of the investigation so that they are on top of the issues and can make the right decisions, rather than having a team report to them the results of their findings. This is a significant undertaking and the top executives should be involved and all on board. If they are very involved at the beginning and along the way, this will be a key to your success. They should make numerous trips to China in the beginning to be a part of the evaluation of locations, finalizing your site selection, and creating your Chinese company.

The executive team may not remain as active after the lease agreement is signed, the company is formed, and you then move forward with the design and installation of the pilot and green field facilities. It is still critical to provide them with periodic updates at your business-review meetings and in special update meetings, as necessary.

The Implementation Team

After the site has been selected, the implementation team can be formed, which will receive oversight from the executive management team. This team should consist of the vice president of engineering, the vice president of manufacturing, the division engineering manager, and their department personnel.

This team is what you might call the “traveling team.” This team will consult with key personnel from existing manufacturing facilities in the United States. Among these could include the maintenance manager, the tool-room manager, the general manager, and the plant engineer. Support from these personnel is mostly on an advisory basis, but they also may be required to make occasional trips to China as the initial pilot plant is commissioned. They will provide support associated with both the relocation and the purchase of new equipment in China. They also will provide key training to the Chinese labor force in learning how to operate and maintain the equipment. Finally, they will provide training to those selected Chinese employees that come to the United States.

Step 2. Identify Potential Locations

There are many factors that can enter into your justification for specific industrial zones. The decision is very similar to locating your operations anywhere else in the world, with the exception that most of the best facilities are currently located along the coast of China. There are and will be some changes along these lines as the infrastructure continues to improve in China and companies have the option of establishing operations within the interior of mainland China. Labor costs inland are also typically less than in the more developed cities along the coast. This process has already begun with inland industrial parks offering favorable incentives to