

EWA Webinar

“Feasibility of Global Manufacturing & Supply Chain Strategies”

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east  **west**®

a s s o c i a t e s

DRIVING COMPANY GROWTH IN CHINA, ASIA, MEXICO & CEE

- A leading provider of commercial, operational & risk management solutions and detailed implementation to western companies competing in the ever-changing China, Asia, Mexico & Central Eastern European markets
- Founded in 2005, with executives in China, Asia, Mexico & Central Eastern Europe
- All EWA executives have held senior management positions with P&L responsibilities for western MNCs, including Briggs & Stratton (NYSE: BGG), Bechtel Corporation and Littelfuse, Inc. (NASDAQ: LFUS)

- Extensive experience in numerous key industries:

Automotive

Metal Fabrication

Chemicals

Semiconductors

Specialty Metals

Energy & Natural Gas

General Manufacturing

Consumer Goods

Packaging

Food & Beverage

Laboratory Equipment

Industrial Textile & Apparel

Durable Goods

Filtration & Separation

Electronics

Medical Devices

Food Technology

Costings & Building Materials

Strategic Business
Planning

Manufacturing
Footprint
Optimization

Supply Chain
Optimization

Performance
Improvement

HR & Executive
Recruiting

Risk Management

M&A Due Diligence

Business
Assessment

Research Services



ALEX BRYANT
Founder & President

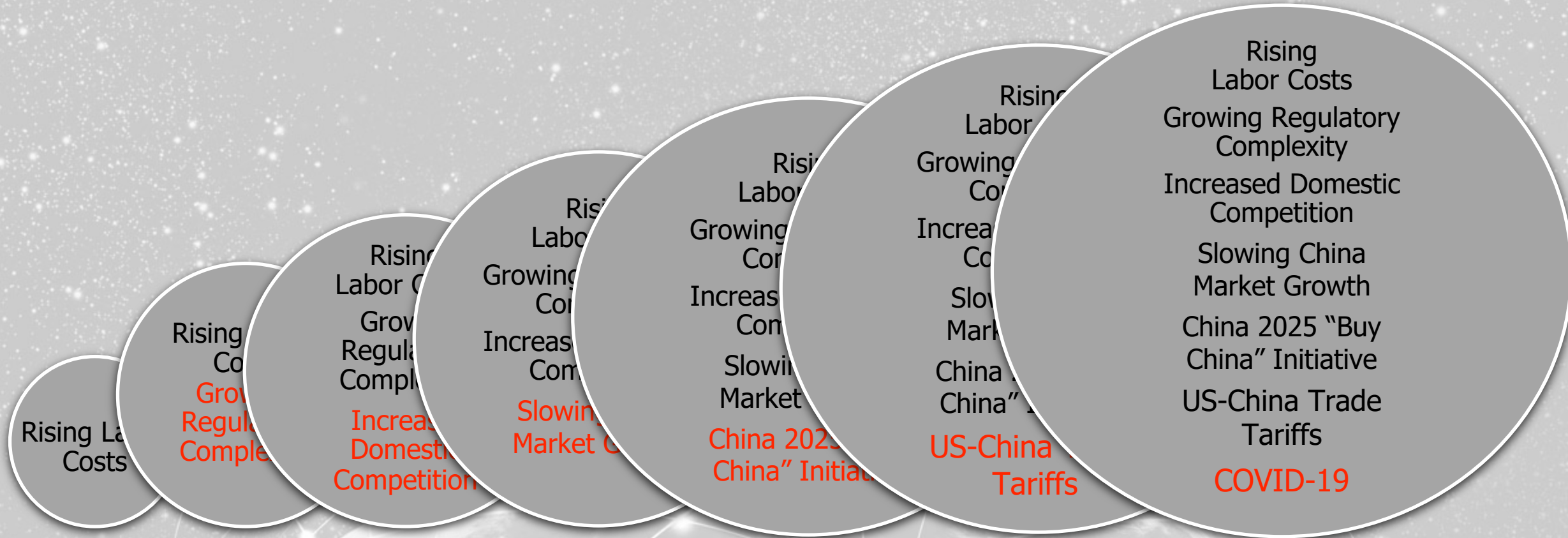


DAN MCLEOD
Director



MARK PLUM
Director

The economic challenges facing western companies operating in China have been continuously evolving and growing for years:



**Increased Threats to
Financial Stability**



**Increased Disruptions
of Operations**



**Increased Awareness of Over-Dependency
on China**

Diversifying Supply Chain & Manufacturing Risks Beyond China

- To adapt to a changing global business environment, many companies are considering expanding/relocating supply chain & manufacturing beyond China to diversify risk.
 - However, it is common that companies struggle to validate the financial and implementation feasibility of their strategy, due to a lack of expertise and resources.
- But, without confirmation that the proposed strategy will deliver the projected Return on Investment (ROI) and can be successfully implemented, costly mistakes can occur, especially in today's rapidly changing global environment.
- The goal of today's webinar is to enable companies to identify and eliminate potential stumbling blocks in validating the financial and implementation feasibility of company strategies to expand/relocate supply chains beyond China.

Today's webinar will focus on the EWA Financial and Implementation Feasibility Analysis of global manufacturing & supply chain expansion/relocation strategies

The purpose of the EWA Financial and Implementation Feasibility Analysis is:

1. To confirm if a proposed strategy will deliver the projected ROI and can be implemented
2. To develop alternative recommendations should the proposed strategy be deemed not feasible
3. To enable companies to move forward with confidence in their global expansion/relocation undertakings

EWA will present:

1. A detailed overview of the EWA Financial and Implementation Feasibility Analysis process
2. Multiple case studies to demonstrate how the process is customized for each company & the positive impact on company decision making

EWA Financial and Implementation Feasibility Analysis Process

Assessment of Current State

Assessment of Proposed Strategy

**Development of Project Plan
for Implementation of Proposed Strategy**

**Development of Business Case
for Implementation of Proposed Strategy**

Financial & Implementation Analysis of Proposed Strategy

To confirm the proposed strategy will deliver projected ROI and can be implemented
To develop alternative recommendations if the proposed strategy is not deemed feasible

Assessment of Current State

- To gain an overview of the current strategy
- To understand how all the manufacturing facilities and supply chain work together to meet market demands (i.e. who makes what, where it is sold, shipping patterns)
- To determine the current state of supply chain & manufacturing footprint
- To document financial metrics, physical assets, etc.
- **To develop a baseline for comparative analysis**

Assessment of Proposed Strategy

- To define what is needed to implement proposed strategy
- To determine if & what additional information or research is needed
- To identify company-specific factors requiring unique skills, equipment, etc.
- To gain insights into potential implementation roadblocks, bottlenecks, etc.
- **To develop a comprehensive project overview of implementation requirements**

Project Plan for Implementation of Proposed Strategy

- Development of a complete implementation project plan:
 - Outlining all tasks
 - Segmented according to various work streams
 - Defining resources required
 - Specifying timetables
 - Estimating costs
 - Etc.
- **To develop an implementation baseline for feasibility analysis**

Business Case for Implementation of Proposed Strategy

- Based upon the project plan, development of a business case covering all financial aspects:
 - Costs of implementation
 - Startup costs
 - On-going cost savings vs. current state
 - Cash generation
 - Etc.
- **To develop a financial baseline for feasibility analysis**

Financial & Implementation Analysis of Proposed Strategy

Financial Analysis

- Costs comparisons to identify savings
- Comparative analysis of to be state vs. current state
- Investment costs analysis to determine viability
- To prioritize returns & value of different work streams
- To identify risks of implementation

Implementation Analysis

- To identify risk of implementation
- To evaluate time table
- To assess impact of resources required
- To priorities implementation actions

Combined Analysis

- To identify risks of implementation

Financial & Implementation Analysis of Proposed Strategy

Upon Completion of Feasibility Analysis:

- EWA meets with the BoD, Investors, Senior Management team
- Review Financial & Implementation Analysis
- Does the proposed corporate strategy meet the Financial ROI projections?
- Can the corporate strategy be successfully implemented?

If the corporate strategy cannot meet the Financial projection or be successfully implemented, EWA

- Develops alternative strategies to 'work around' the current challenges
- Conducts the Financial and Implementation Analysis
- Reviews this Analysis with the BoD, Investors, Senior Management in order to explain why the alternative strategy developed by EWA will allow the company to meet their Financial and Implementation projections.

During a review of the 5 Case Studies, 2 of these Case Studies will include how alternative strategies had to be developed in order to the client's Financial and Implementation projections

EWA Feasibility Analysis Case Studies

***Proposed Supply Chain Strategies in the US, Mexico,
Asia and Central Eastern Europe (CEE)***

Assessment of Current State

- Client is a manufacturer of automobile and truck accessories. Market is primarily North America.
- Assessment revealed that client spends \$14M annually from Chinese suppliers of components that are assembled in Michigan.
- A review of supplier quality indicated that a major supplier had struggled with intermittent quality problems and late deliveries
 - Tariffs could not be fully passed on and were a significant impact to the overall business performance
- A review of customer locations showed the largest customers of one product line are located in northeast Mexico. Several years ago, client had investigated costs for moving some manufacturing/fulfilment to the area to reduce freight costs and improve responsiveness

Assessment of Proposed Strategy

- EWA was engaged to assess availability of suppliers and refresh/validate assumptions around relocating manufacturing to Mexico.
- Critical supplier capabilities included:
 - Aluminum die casting
 - Tube Bending/Fabrication
 - Chrome plating
 - Wire Harnesses

Factory requirements:

- Staffing 20-30 people
- Space ~20,000 ft²
- No unusual utility requirements
- Minimal automation
- Processing equipment <\$100k

Project Plan

- Develop Sourcing Strategy/Identify Opportunities
 - Identify potential suppliers
 - Supplier Assessments
 - Product Qualification
- Establish Manufacturing/Fulfillment Operation in Mexico
 - Regional analysis to select best fit based on labor, property, proximity to customers and suppliers, logistics, security situation
 - Assess Pros/Cons of Operating Models
 - Contract Manufacturing
 - Operating under a "Shelter Company"
 - Establishing a new legal entity
 - Purchase or Lease factory space
 - Factory equipment purchase and installation
 - Hiring, Training, Factory commissioning
 - Transitioning to local raw material suppliers

Business Case

- Sourcing
 - Get indicative pricing for a few key components to assess competitiveness
 - Estimate impact of move to Mexico on freight and duties
 - Estimate change in inventories
- Estimate cost to setup and operate Factory
 - Lease factory space
 - Purchase factory equipment
 - Factory design/project management
 - Startup Costs – training, technology transfer
 - Factory operating expenses – labor, utilities, MRO, G&A
- Cash flow projection through the project

Implementation Analysis

Sourcing

- Identified 2 superior suppliers of aluminum die castings
- Capable plating contractors are available in the northeast. Several US companies have established operations in the past decade to support automotive manufacturers and the aftermarket sector. Technology tends to be newer and can meet environmental requirements.
- Tube bending & fabrication capability is good, particularly along border
- Wire harness manufacturing is available in automotive, aerospace in NA manufacturing

Recommendation to source and establish factory in Mexico to supply the local market

Area around Saltillo in northeast Mexico recommended for factory location

- Established automotive supplier network
- Good logistics connectivity to USA
- Proximity to major customer
- Industrial Property

Operating Model

- Recommended to **not** set up a legal entity due to small scale of operation. Legal, HR, and compliance costs would be excessive.
- Assembly and Fulfilment operation ideal for operating in a Shelter Company to speed setup, minimize admin burden, but maintain close management of critical final process steps and QA
- Wire Harnesses a good fit for contract manufacturing due to wide-spread availability of technically competent suppliers.

Searching in Mexico is viable for 60% of China spend

- Freight and tariff savings of \$1.1M
- Relocation of final assembly of product for the Mexico market can save \$0.7M annually in operating and freight costs
- Inventory reduction estimated at \$1.7M

Recommendation accepted to source and establish factory in Mexico

- First Priority to Establish New Suppliers
 - Qualify suppliers of critical components in Mexico
 - Ship samples to Michigan for analysis
 - Goal: Demonstrate capability of new suppliers in the US operation before starting production in Mexico
- Select location for New Factory
 - Develop RFP for Shelter Services and select from minimum of 4 companies in Saltillo-Monterrey region
- Target 10 month transition

EWA engaged to manage project to establish sourcing & manufacturing in NE Mexico

Assessment of Current State

- Client manufacturing product both at a factory in the US and via contract manufacturers in China.
- Major markets are North America and Europe. Products are supplied to both markets from the US and China.
- Key takeaways from the assessment
 - Increasing costs from China, long lead times, and logistics costs limited ability to grow in Europe
 - Tariffs added nearly \$40M to import product from China to the US
 - Due to seasonality of the business and long lead times, inventories were averaging 5 months supply

Assessment of Proposed Strategy

- Preliminary cost analysis by client indicated substantial savings available from relocating production to Europe
- Proposed Strategy
 - Transfer volume from China to USA to maximize capacity utilization of US factory and minimize imports
- Relocate manufacturing for European market to Eastern Europe
- EWA was engaged to
 - Validate savings assumptions for relocating production to Europe
 - Recommend region best suited to client's requirements
 - Develop capital and operating cost estimates for the European facility
 - Identify key suppliers and service providers to support the move
 - "Roadmap" process for establishing business entity in the new region

Project Plan

- Developed a complete implementation project plan:
 - Country/Region Selection
 - Establish contacts with government and economic development agencies
 - Application process for investment incentives
 - Identify key service providers
 - Property Developers
 - Engineering and Design Firms
 - General Contractors
 - HR services and recruiting firms
 - Suppliers of major raw materials
 - Purchase property or existing factory space
 - Permitting requirements
 - Design and construct factory
 - Factory equipment purchase and installation
 - Hiring, Training, Factory commissioning
 - Transitioning to local raw material suppliers

Business Case

- Developed estimate of project cost
 - Capital Expenditures – build or purchase a factory
 - Lease and Management Fees – lease a factory
 - Equipment costs
 - Project management, Engineering, and Training costs
 - Labor, Utilities, Operating Costs
 - Logistics cost to serve European market
 - Impact on inventories
 - Cash flow projection through the project
 - Tax and other financial incentives

Implementation Analysis

- Evaluated 4 Central European countries
 - **Poland recommended**
- Interviewed and qualified 4 property developers to understand lease costs and available properties on the market
- Identified local engineering partner with design, construction management capability
- Met with development agencies to understand incentives – tax, hiring and training, preferential access to property
- Identified multiple suppliers of key raw materials/components –
- Goal: localize 90% of raw materials & suppliers in 2 years

Financial Analysis

- Lease determined to be more attractive
 - Minimizes cash required
 - Increased options...“Build to Suit” rather than existing factory or standard building design
- Confirmed substantial cost savings of the project:
 - Freight and Logistics \$3.3M annually
 - Labor Savings \$2.9M annually
 - Tax Savings \$12.6M over 10 yrs.
 - Inventory reduction \$15M

Decision made to invest in Europe

- Southern Poland selected as best fit
 - Availability of technical and managerial staff
 - Logistics connectivity to western Europe
 - Established supplier network
 - Multiple capable property developers active in the region
 - Attractive tax incentives
 - Supportive local government
- Chose “Build to Suit” model with option to purchase at end of lease
- Facility will be factory/distribution center
 - Replace 2 of 6 distribution centers
 - DC can be converted to factory as business grows
- Identified suitable properties (1st choice and 2 backups)

EWA was engaged to finalize property selection, develop bid package for design/build of factory, select property developer and qualify local suppliers

Assessment of Current State

- Client sources \$150M annually of consumer goods via supplier network in China for resale within the North American market
- Company owners and investors very uncomfortable with their consumer good procurement coming 100% from China
- BoD had set a target of relocating 25% of procurement spending outside of China within 14 months
- During the assessment, EWA was able to determine that:
 - China costs have increased substantially since the supplier network started in the early 2000's. With the addition of tariffs and high inventories resulting from long lead times, profitability has been declining
 - The logistics and demurrage charges had increased substantially over the past 7 years
 - The company's distribution centers struggled with inventory planning and the company was consistently paying air freight costs to ship small parts to other distribution centers in order to meet customer orders

Assessment of Proposed Strategy

- Client engaged EWA to evaluate options for meeting this BoD directive.
- The BoD and the management team believed Mexico was the right location since the customer base was North American
- This included:
 - Determining where to relocate
 - Which products should be relocated from China
 - How to develop a local supply chain network

Project Plan

- Developed a complete implementation project plan, including Product Selection, Country/Region Selection, Make vs. Buy, Supplier identification & qualification strategy, etc.
- Develop Product Selection criteria
 - Complexity, Costs & Logistics
 - Seasonality
 - Supplier Assessments
 - Product Qualification requirements
- Develop Country Selection criteria
 - Availability of established contract manufacturers
 - Stable, favorable trade agreements
 - Logistics
- Develop Sourcing Strategy/Identify Opportunities
 - Identify potential suppliers
 - Supplier Assessments
 - Product Qualification
 - Transitioning to local producers

Business Case

- Sourcing
 - Get indicative pricing for a few key products to assess competitiveness
 - Estimate impact of move to Mexico on freight and duties
 - Estimate change in inventories
 - Get indicative logistics costs within Mexico
 - Determine which selected products are significantly higher in Mexico than China
- Cash flow projection through the project
- Financial benefit of Mexico due to proximity to the customer base and advantages of the USMCA trade agreement
- Costs of shifting sourcing to contract manufacturers in Mexico

Implementation Analysis

Mexico

- Identified capable contract manufacturers producing similar products
- Engaging a 3PL in Mexico to provide warehousing, load consolidation, transport management for shipments to distribution centers and customers in the US
- Reduce inventory levels
- Enable to shutdown of a distribution center in the US
- Decreased space requirements at other distribution centers

Vietnam

- During analysis and discussions with client's team, determined that two of their primary suppliers had expanded operations into Vietnam 5 years earlier. Included these suppliers into the analysis as comparison to Mexico sourcing.
- Worked with the existing logistics partner to include shipments from VN into the existing agreement

Financial Analysis

Mexico

- Evaluated pricing and logistical costs
 - Determined one targeted product line not cost effective to move
- Cost to transition to Mexican suppliers: qualification costs, shipping costs

Vietnam

- Savings from tariffs
- Logistical costs similar to China
- No significant qualification challenge using an existing supplier
- Cost for one particular product line less in Vietnam than Mexico

Decision made to minimize investment and risk

- Mexico and Vietnam Consolidation

- Freight & Warehousing cost savings \$0.7M (annually)
- Tariff Cost Savings \$6.6M (annually)
- Inventory Reduction \$2.3M
- Project completed ahead of schedule
- No disruption to ongoing production incurred

Assessment of Current State

- EWA reviewed and assessed the client's manufacturing facility and a sourcing organization in China for the production of products for sale in China, the USA and the fast-growing emerging ASEAN market
- It was determined that China sales accounted for less than 20% of revenue and were in decline, due to an on-going global relocation of key customer base industries
- Profitability had been significantly reduced, as a result of 2 key issues:
 - Decreased margins, due to the rising labor rates, compliance costs and domestic competition in China
 - Decreased exports to the US, due to the US-China trade tariffs

Assessment of Proposed Strategy

- EWA was engaged to assess feasibility of an operational & sourcing strategy that would relocate from China to Southeast Asia
- Options evaluated were
 - Stay in China – no change to current situation
 - Adopt a "China+1" approach, expanding into SE Asia while maintaining the operation in China to support the domestic market
 - Relocate the entire operation to SE Asia
- To support the new operation, client desired to localize 90% of suppliers in the new region

Project Plan - Supply Chain

- Development of a Sourcing project plan:
 - Confirmation of supplier requirements for components and finished goods
 - Identify potential suppliers and audit operations: material planning, quality mgmt. systems, production equip processes, engineering support, regulatory compliance, technical capabilities
 - Obtain approvals of sample, pricing and technical requirements
 - Finalize supplier selection
 - Client and EWA visits, contract negotiation
 - Supplier transition with material and demand planning

Project Plan - Manufacturing

- Development of a Factory Relocation
 - Country & region site selection for new factory
 - Industrial Zone negotiations
 - Governmental and tax negotiations
 - Design and construction of new factory
 - Initial site hiring, training and start up of employees
 - Rationalization of existing operations and supply chain relationships

Business Case Supply Chain Relocation

- Gather indicative pricing for key components and raw materials to assess competitiveness of local suppliers and understand impact on product cost
- Estimate impact of move to SE Asia on freight and duties to supply USA, SE Asia, and China
- Estimate change in inventories

Business Case Factory Relocation

- Estimate cost to lease or build a factory
- Develop budget for startup costs for training, technical support
- Estimate annual operating expenses – labor, utilities, MRO, G&A
- Tax and other financial incentives
- Cash flow projection through the project

Implementation Analysis

- Evaluated 5 countries in SE Asia – Philippines, Malaysia, Indonesia, Vietnam, Thailand

Thailand best fit for operation

- Highly developed industry-specific supply chain
- Infrastructure & logistics hub of ASEAN market

Recommendation to Expand Supply Chain and Manufacturing into Thailand

- and fastest a
- Best investme
- Competitive l
- technical staf
- Supportive and efficient Board of Investment

Due to size of the facility (500,000 ft2),

- Unlikely to find suitable property on the market

Due to less established property

development market,

- Recommend land purchase and build-to-suit factory

Financial Analysis

Business can not support a “China + 1” strategy

- Domestic China business is too small to justify a factory

Available Tax Incentives are very significant

- 8 year tax holiday from corporate income tax (CIT)
- 50% holiday for an additional 5 years

AN market

- \$4.5M annual labor savings after 5 years
- \$1.8M annual material savings after 5 years
- \$3.2M annual tariff savings

Lower costs can support growth of ASEAN market

Forecasted business growth -

- 42% increase in sales over 5 years
- 53% increase in profit over 5 years

Recommendation accepted to expand supply chain & manufacturing into Thailand

- EWA was engaged to manage capital investment and expansion into Thailand
 - Project completed and factory startup in 18 months
 - 1 month ahead of schedule
 - 4% below budget
 - Localized 80% of raw materials and suppliers within 18 months

Decision made to “wait and see” on shutdown of China operation

- Move out of China to be re-visited if domestic market continues to decline

Assessment of Current State

- Client is a manufacturer of bulk material handling and process equipment.
- Product is designed in the US and manufactured at factories in the US and Shanghai.
- Assessment of the China business showed increasing costs, tariffs on imported components, and increasing domestic competition have cut margins on the China products in half.
- Client had begun outsourcing some production in China to control costs. This had grown to nearly 50% of the business over the past 5 years.
- Business growth in Southeast Asia has been stronger than in China over that same 5 year period.
- Client shared that they had been considering establishing a sourcing and engineering office in a lower cost country. This office would manage contract manufacturers and eventually take over some product design.

Assessment of Proposed Strategy

EWA was engaged to assess suitability of the Philippines and Vietnam as a base of operations in Southeast Asia. New office would oversee contract manufacturing of equipment and eventually house design engineers to supplement the team in the US.

Requirements are

- Availability of equipment design and fabrication shops with experience in the food, chemical, mining, and/or pharma industries
- Network of suppliers for controls, electrical components
- Strong engineering/technical talent pool
- Good logistics connectivity to Southeast Asia
- Housing, Community, Security suitable for an expat manager during the first few years of the operation

Project Plan

- Developed tasks and timetable for various work-streams
 - Multi-Country Study to select best country/region for the new office and supply chain
 - Identify Potential Suppliers
 - Research supplier base
 - Factory Visits and Audits
 - Background/Reference Investigations
 - Staffing
 - Collect Salary Survey information for Technical and Admin staff
 - Advertise/Recruit Staff
 - Office Locations
 - Connect with realtors, property managers to get indicative pricing
 - Identify interior decoration/office fit-out contractors
 - “Roadmap” process for establishing legal entity
 - Identify suitable expat housing and services
 - Develop list of service providers – legal, accounting, banking, HR

Business Case

- Develop budget for new design/sourcing office in Southeast Asia
 - Legal, licensing costs to establish a new entity
 - Staffing – market rates for salaries, benefits, amenities
 - Office lease and running expenses
 - Expat housing, schooling, transport
 - Taxation

Implementation Analysis

Neither Vietnam nor the Philippines were recommended as a new base of operations.

- Although labor costs are low, each has significant deficiencies:
 - Finding capable fabricators/contractors will be challenging.
 - Neither country is well established in the client's target markets
 - Technical/Engineering talent is in short supply in Vietnam
- EWA included **Thailand** in the analysis to access a more mature and developed supplier base, good logistics connectivity, and access to a professional workforce.
- A preliminary survey of suppliers uncovered 8 located in the Thailand Eastern Economic Corridor that were a potential fit for the client requirements.
- The region east of Bangkok struck balance between availability of affordable office space, access to professional staff, proximity to supplier base, and a reasonable commuting distance for expat staff.

Financial Analysis

- Budget was developed for establishing and running a new office in the southeast suburbs of Bangkok. Key findings – as compared to China's Tier 1 cities -
 - Comp and Benefits for professional staff roughly 60%
 - Office rental 65%
 - Expatriate housing, taxation, schools, transport 70%
- Time and expense to register a new company typically half of China

Decision made to establish office in Thailand

- EWA was engaged to support establishing the new operation
 - Registering new legal entity
 - Finding and fit-out of suitable office space
 - Recruiting and hiring 6 local professionals
 - Identifying and qualifying 2 contract manufacturers
- New office staffed and operational within 6 months

Thank you for your time & interest

We hope this webinar has provided valuable insights into validating the financial and implementation feasibility of your global supply chain expansion/relocation strategies

For further information as to how East West Associates can improve your business, please contact:

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