



American Ceramic Society
Leadership Summit
August 2, 2011



A Small US Company's Approach to China

Thomas A. Cole
then President/CEO Minco, Inc.
now V.P. Business Development Ceradyne, Inc.

Storyline

- Minco Business explained
- Make decision about China
- How we implemented
- Assistance along the way
- Outcome after Ceradyne purchase

VISION

Delight our customers and shareholders while having fun and working safely.

MISSION

Provide superior engineered materials based solutions, through value added technically oriented selling, to industrial primary manufacturing companies worldwide.

Minco, Inc. Before Ceradyne

- *Stand alone company
- *About \$20 million revenue
- *Value add technical sell/teach
- *Process rotary electric arc /fuse / size / blend / proprietary mixes
- *Primary market – Precision Investment Casting
 - Lost wax foundry process
 - High US market share
 - US dominates the market

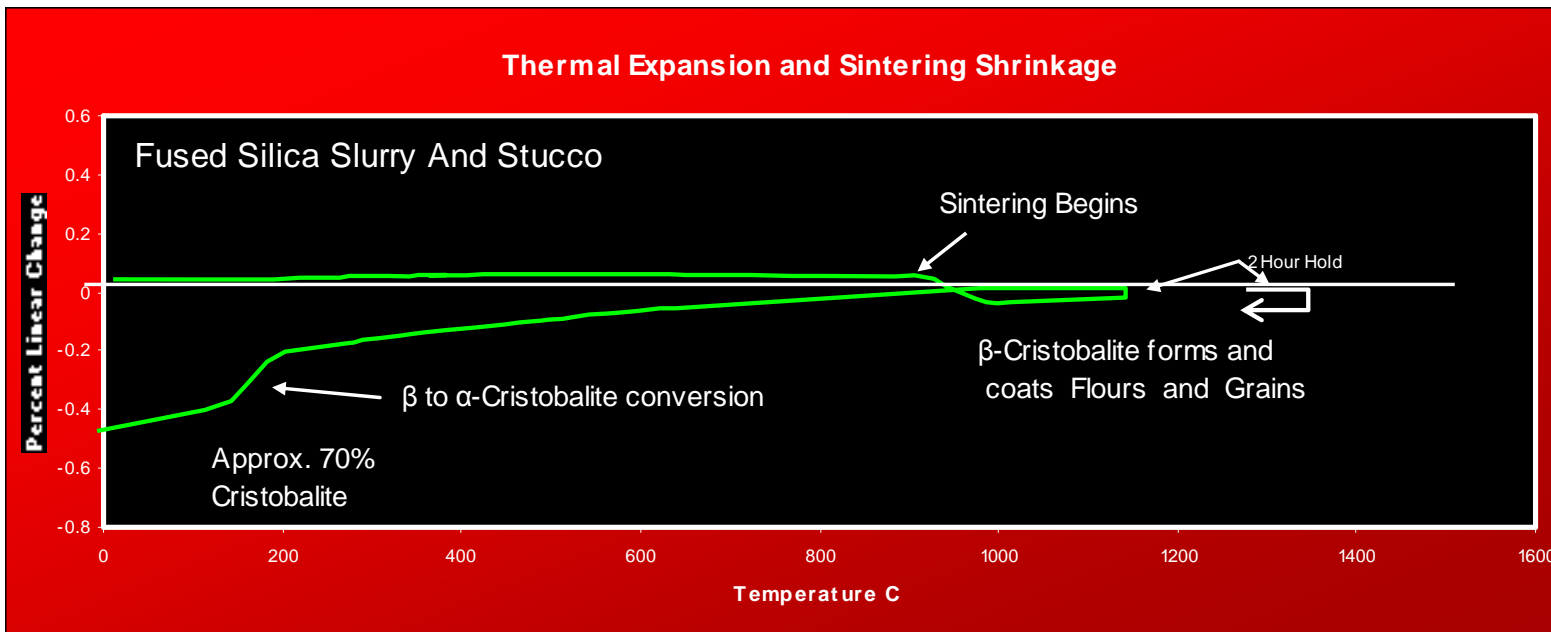


MINCO'S KEY TECHNOLOGIES

(In Order of Value)

1. Market Application
2. Crushing, Grinding, Blending
3. Fusion

Thermal Characteristics of Fused Silica



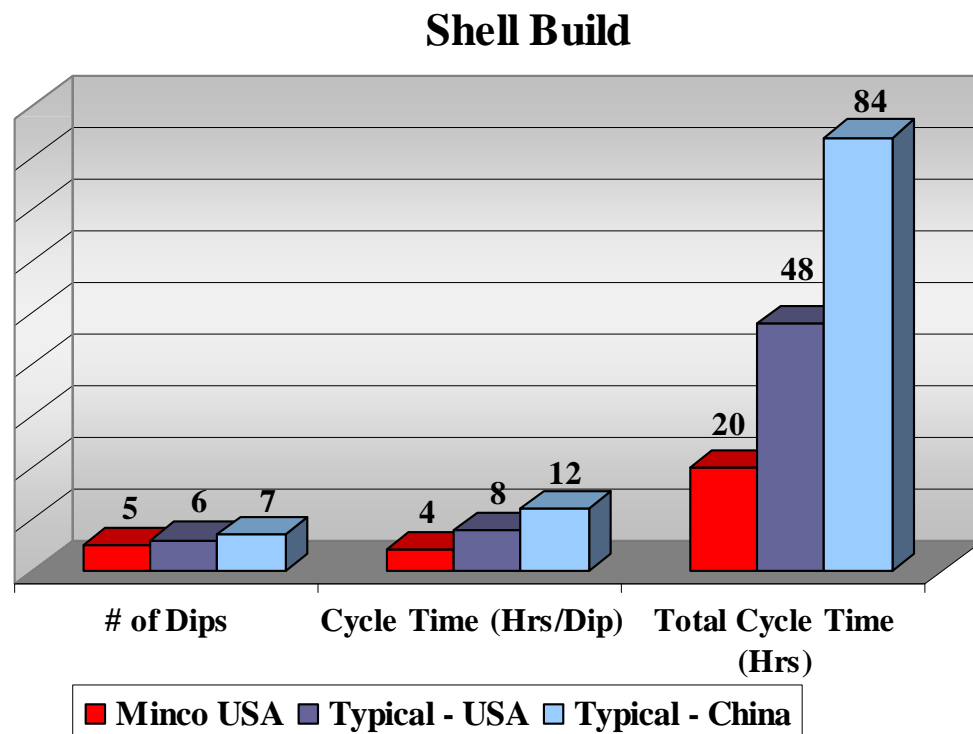




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Minco's Competitive Advantage in Shell Build for PIC



Educate Self

- Professional Classes
 - Cal Tech
 - AMA
- Books
 - 1 Billion Customers
 - Swallowing Clouds
 - Guidebooks Lonely Planet & Frommer
- Language
 - Rosetta Stone
 - CD's / Books / Dictionaries
 - Live Teacher

Classes

- Cal Tech “Growing Your Business in China”
 - Private versus Public Property
 - Contracts a beginning not end
 - Guilt versus shame
 - Relationships networking
- AMA “Doing Business with China” (no longer offered)
 - Cultural differences
 - Language barriers
 - Legal difficulties
- Both classes
 - Interaction of attendees

Books

One Billion Customers by James McGregor

By line – Lessons from the front lines of doing business with China

- Author was WSJ bureau chief turned businessman
- Contracts not as important as relationship
- Avoid JV with government entities
- In China, a conflict of interest is viewed as a competitive advantage
- Assume your technology is being copied
- Isolate the pieces of technology
- If the boss wants to do a quick deal in China lose his visa

Books cont'd

Swallowing Clouds by A. Zee

By line – A playful journey through Chinese culture, language and cuisine

- Author - a college physics professor
- Benefits of Pinyin vs. Wade-Giles Dictionaries
- Complexities of culture
- Description of mandarin
- Good wontons versus bad



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Language

A few words go a long ways.

My favorites:

Ni hao

Xie xie

Pengyou

Mei wenti

Guanxi

Bing pijiou

Build and Leverage US Resources

- Minco Staff
- Consultants
- Corollary Partners
- US China Business Council
- Translator
- Business Card / Key Literature (Mandarin)

The US-China Business Council

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Locate and meet Chinese Resources

Government Entity

Our case MinMetals

University Specialty

Our case Tsinghua

(foundry department)

Trade Associations / Conferences

Minerals Conference

PIC Conference

Consultants

Mark Mak

Tractus – John Evans



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Industrial minerals

**CIMC6 – 6th Chinese Industrial Minerals
Conference**

18-20 September 2005

Pudong Shangri-La, Shanghai



**上海
2005**

China Minmetals Corp.

- Minerals and metals
- Huge government owned co.
- Changing from import export
- Changing to strategic asset ownership
- Controls 9 listed companies
- Lots of connections and power
- minmetals.com



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Premarket the Product

- Need importer
 - warehouse
 - shipping
 - invoicing
 - collecting

Tractus was the solution

Private Sector Practice

Consulting & Advisory

- Market Research
- Feasibility Studies
- Strategy Development
- Mergers & Acquisitions
- Partner Searches & Structuring
- Site Selection
- Regulatory Advice

Project Implementation

- Operational & Financial Due Diligence
- Real Estate & Incentives Negotiations
- Acquisition & Partner Negotiations
- Corporate Entity Establishment & Secretarial Services
- Project & Construction Management

Business Incubator™

- Low Cost – Low Risk Market Entry Option
- Office Space, Back Office Support & Management Oversight
- Sales & Sourcing Representation
- Manufacturing Start-Ups & Operational Management
- Human Resource Assistance



Find Your Partner

- Use your resources for intros
- TRAVEL TRAVEL TRAVEL
- Repeat to build relationship
- By third visit you can discuss JV



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Business Decision Chinese Menu

US OPTIONS

1. Ignore
 2. Import fused
 3. Import fused/processed
 4. Import processed
supplemental niche product
- All of Above

PLUS

- No resources
Focus on our business
Economics unclear
- Minor economics gain
- Profitability
Protected customer based

MINUS

- Eroding sales profits
- Currency risk
- Reputation
Teaching them
Currency risk
- Currency risk
- Sale Opportunity
Lost in China

	<u>CHINA OPTIONS</u>	<u>PLUS</u>	<u>MINUS</u>
JV	Process only / Buy Fused	Low capital Local connections	Control Teaching them
JV	Fuse and Process	Better quality assurance	Control Capital Teaching them
WOFE	Process only / Buy Fused	Low capital	Political risk People resources
WOFE	Fuse and Process	Best quality assurance	High capital Political risk
	All of above	Chinese Sales Opportunity	

Market Analysis / Diligence

- \$25,000 market study on the Chinese PIC Market (by SAI, cost shared with Nalco)
- 15 trips to China by management
- Meetings with Chinese PIC Trade Association
- Meetings with Academics
- 20 visits to potential customers
- 10 visits to fused silica producers

China PIC Market

Published by China Investment Casting Association

Sorts of Technologies and Castings			Items	2006
Colloidal silica or ethyl silicate shell process	1	High value added casting	Number of foundries	60
			Output (thousand tons)	0
			Turnover (Million USD\$)	130
	2	General commercial castings	Number of foundries	450
			Output (thousand tons)	138
			Turnover (Million USD\$)	1222
Sodium silicate shell process	3	Castings of sodium silicate process	Number of foundries	1200
			Output (thousand tons)	620
			Turnover (Million USD\$)	835

Minco Analysis: Commercial M.T. x 1.2 166,000 M.T. shell material
 166,000 M.T. shell x \$550/M.T. = \$91 million market
 Conversion of type 3 (now obsolete in US) = 5X

Fused Silica Technologies

Typical Chinese



Minco



	All Chinese	Minco
Power On	8 hours	3 hours
Ingot Size	1 M.T.	4+ M.T.
Finished #'s/KWH	1	2
Electrode	Frozen in Ingot	Non contact
Unfused Border	Jagged gradient between fused and unfused	Well defined - clean removal

China Rationale

- Right Place, Right Time
 - Fusion advantages with power costs in China
 - Needs of Chinese investment cast industry
 - Lack of fused silica or engineered shell
 - Huge market exists
 - Existing Opportunity already 4x US, and growing at 4x US rate
 - Zircon shortage/price/technology/AZL partner
 - Nalco timing identical

Major Considerations:


- Exodus of manufacturing from US
- Public relations issue in US of cooperation with Chinese
- Currency changes expected
- Political / connections risk in China
- Theft of technology
- Infrastructure availability in human/legal/technical



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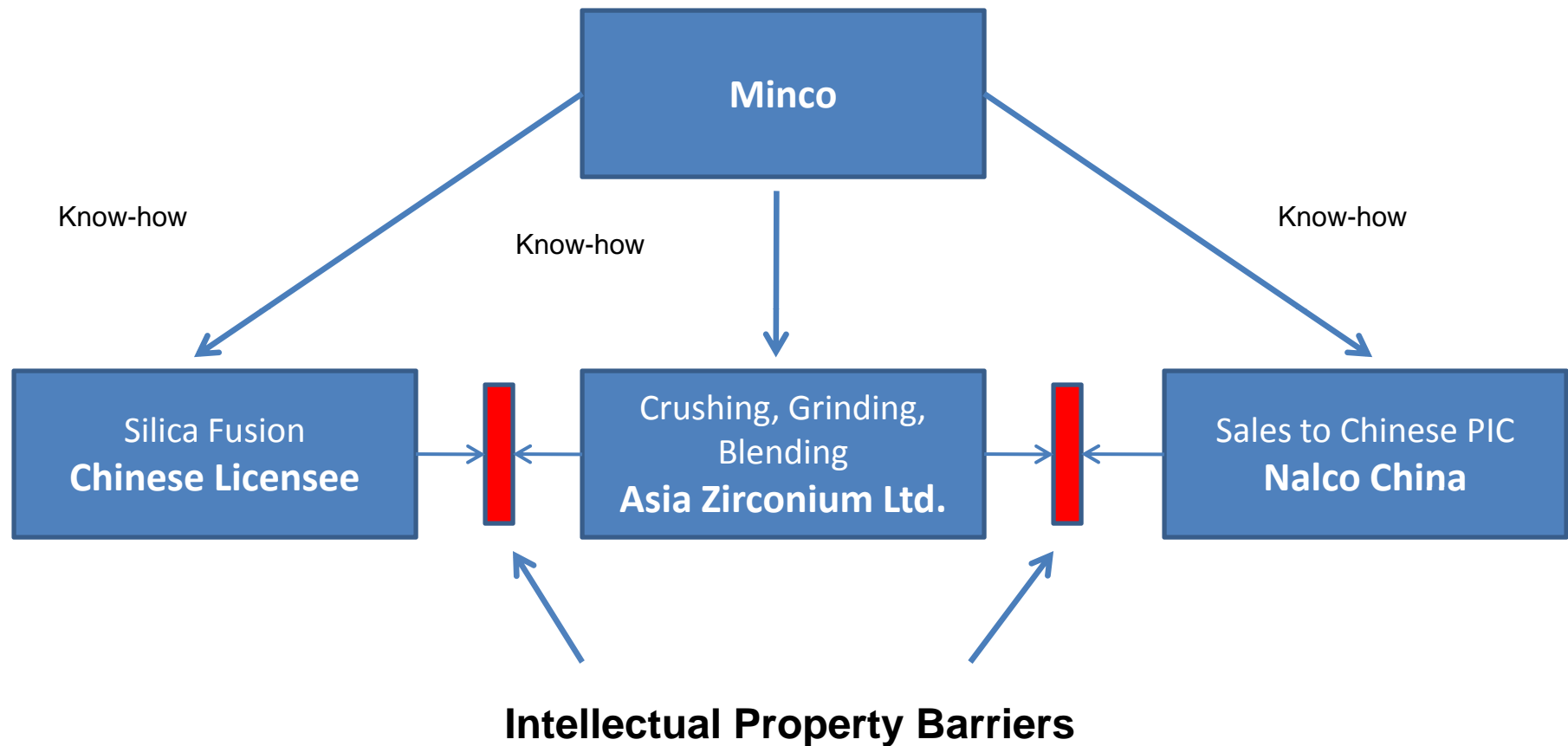




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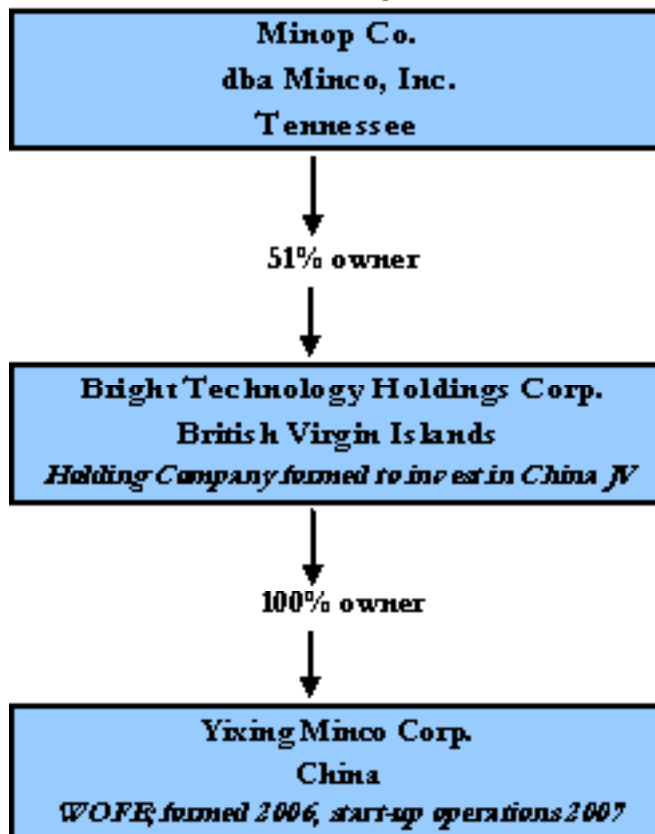


Minco China Intellectual Property Barriers





Negotiate your deal structure



Investigate your partner

- call it due diligence
- Chinese PI
- Chinese network



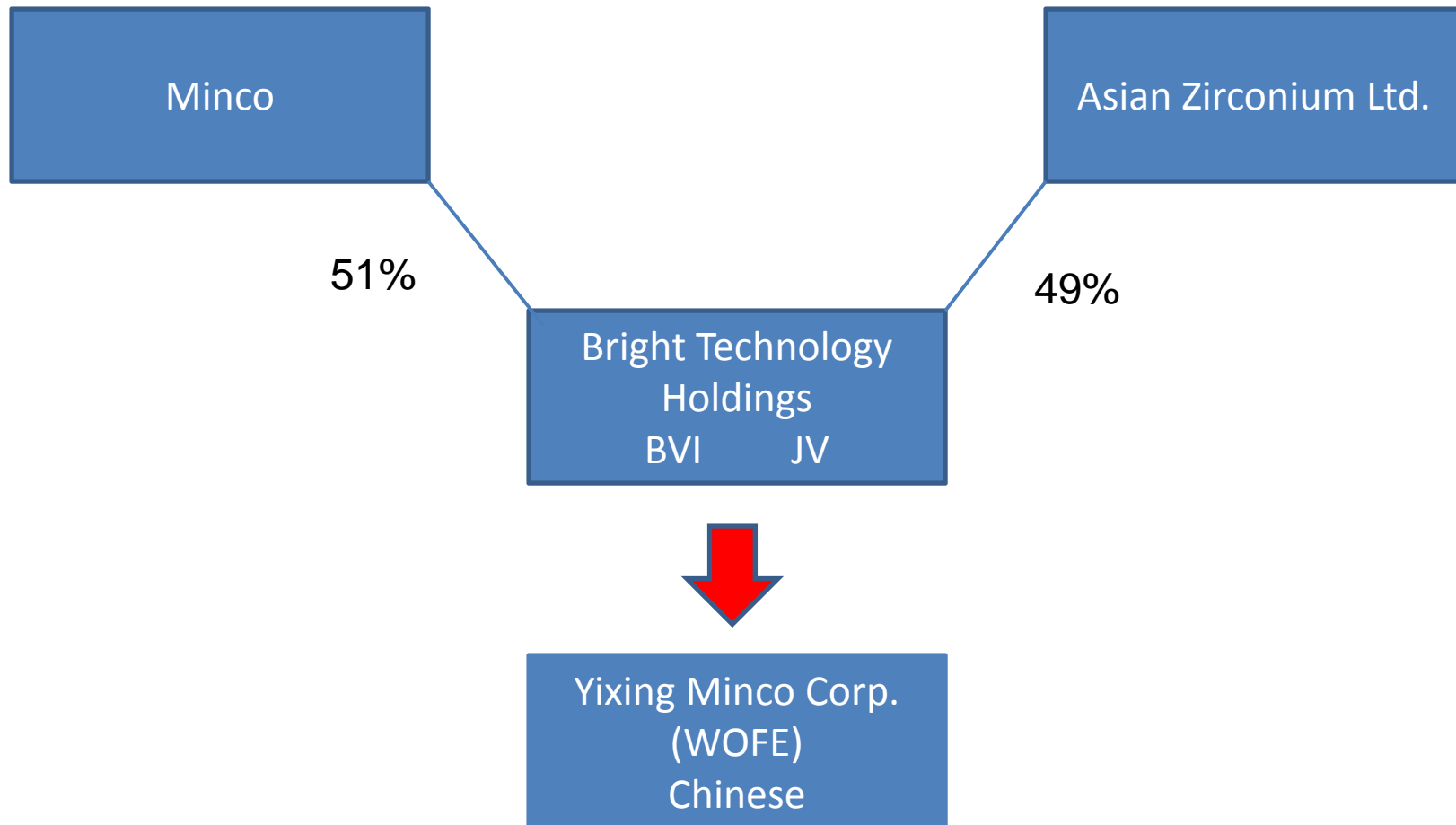
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The Deal

- 51/49 BVI JV
- 2:1 Directors Both JV and Wofe
- Cash credit for Minco technology
- Building to spec built by partner
- Building & land from partner
- Initial admin infrastructure from partner
- Proprietary ingredients purchased from Minco
- Sales thru Nalco

Deal Structure



Private Investigator - Control Group Ltd.
(Shanghai)

BVI JV done by J. S. Archibald Trust Services Ltd.
Tortola, BUI

WOFE would now recommend King & Woods
Beijing

Factory Construction

- Building & utilities typically Chinese
- Production line low capital high labor
- Equipment almost all Chinese
- Construction and equipment about 20% of US
- Minco specified and visited all equipment

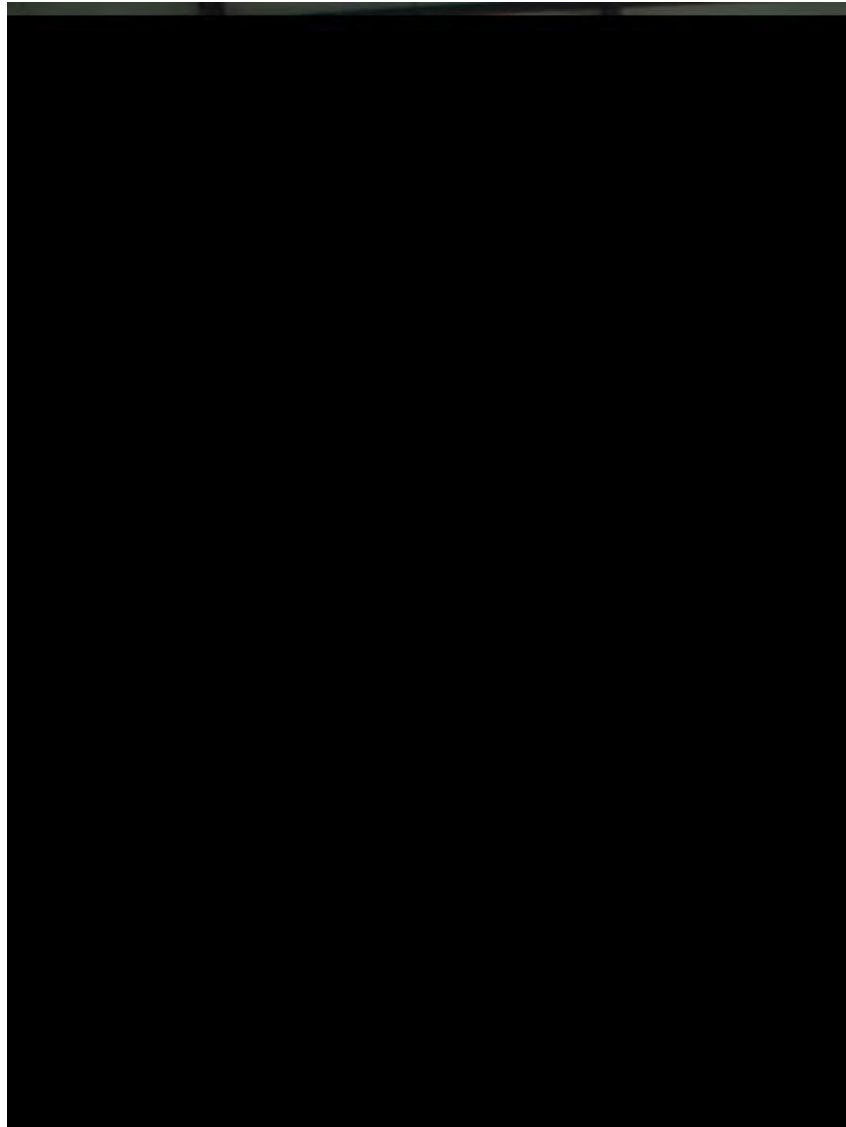


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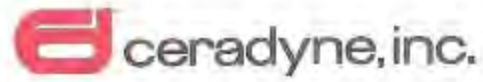
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Ceradyne Corporate Overview



- Founded in 1967
- 1984 Public on NASDAQ: CRDN
- 2,200 people US, Germany, China, Canada
- >1.9 million sqft of manufacturing
- Diversified product portfolio of advanced ceramics
- Strong position in defense industrial and energy markets
- Vertically integrated supplier
- \$270 million in bank
- Acquisitive

After Ceradyne Purchase

- Fate of Yixing Minco up to me
- Ground rules for decision
- Go back in time to original decision
- Big company with infrastructure in Tianjin
- Forget sunk cost
- Able to fairly buy out partner
- Right decision obvious but hard



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