Indicators and Impact of China’s Changing Economy

May 2014
China’s Great Rebalancing Act

After three decades of rapid economic growth China is now at a critical inflection point – from investment-led growth to a more sustainable model of domestic consumption.

Key Questions:
- Just how imbalanced is China’s economy?
- How did China get here?
- What sectors are starting to show signs of vulnerability?
- What are some likely scenarios to come?
- What is the impact on businesses?
China’s Economic Growth – The Old Story

The IMF had estimated that the Chinese economy may overtake the US by the end of this decade

According the a recent report by the World Bank’s International Comparison Program, China’s economy will overtake the US economy in terms of size on a PPP basis sometime in 2014

Source: International Monetary Fund World Economic Outlook Database; Wall Street Journal
Growth Prospects - Assessment from the Top

However, China’s leadership has recognized the vulnerability of the country’s continued economic growth…for some time already

As early as 2007, then Premier Wen Jiabao warned:

“China’s’ economy is unstable, unbalanced, uncoordinated and unsustainable.”

“中国经济存在不稳定、不平衡、不协调、不可持续的问题。”
Fundamental Sources of Economic Growth

Understanding Premier Wen’s comments

There are three basic sources of economic growth:
• Increase in Labor
• Increase in Capital
• Increase in Productivity (from existing labor and capital)

China’s economic growth so far has been largely input-driven: first by labor and then by capital/investment.

Input-driven growth – although important at early stages of development – is not sustainable.

Proxies to analyze China’s situation include:
• Labor = Population
• Capital = Fixed Asset Investment
• Productivity = Urbanization

Source: Vikram Mansharamani: Boombustology
China’s aging demographics mean no further inputs from labor as a source of economic growth

“The demographic dividend that has driven growth in China for many years is now coming to an end.” - Ma Jiantang, head of China’s National Bureau of Statistics
Labor: China an Aging Nation – Trend Will Continue Despite Reform

Even with the recent announcement of an easing of the One-Child Policy, the demographic momentum remains in place and the overall trends will not change significantly.

"There is no nationwide timetable for the implementation. Each province, city or district should make a specific timetable based on local conditions."
- Wang Peian, Vice Minister of the National Health and Family Planning Commission, Nov. 2013

Impact from the policy change may result in an increase in the rate from approximately 1.2 to around 1.8, but still below the 2.1 level required for a stable population.

Source: United Nations; International Monetary Fund; The Economist; Los Angeles Times
Capital: China’s Overinvestment – Unbalanced and Unsustainable

“Economic growth that is based on expansion of inputs, rather than on growth in output per unit of input, is inevitably subject to diminishing returns.”

Paul Krugman, ‘Myth of Asia’s Miracle’

Fixed investment as a component of China’s GDP growth has increased significantly over the last decade to unsustainable levels.

China now has a level higher than Japan (33%) or Korea (38%) at the peak of their growth booms.

Developed economies average about 20% or less.

Source: International Monetary Fund; www.alsosprachanalyst.com
Capital: China’s Overinvestment - Domestic Consumption Imbalanced

Domestic consumption as a percentage of GDP has fallen as China’s economic growth took off.

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tbody>
<tr>
<td>Percentage</td>
<td>45%</td>
<td>36%</td>
<td>36%</td>
<td>35%</td>
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</tbody>
</table>

Even much lower by historical comparisons with other Asian economies during their boom years.

Source: China National Bureau of Statistics; World Bank; IMF
China’s Overinvestment – Unbalanced and Unsustainable

Large-scale capital investment projects have included:

- Infrastructure – China’s new high-speed rail system; roads and bridges
- Support for SOEs - growing industrial and manufacturing overcapacity
- Real Estate

Dongguan’ New South China Mall – 98% Empty

Ordos – China’s “Ghost City” in Inner Mongolia
Jiaozhou Bay Bridge (near Qingdao, Shandong Province) - According to Guinness World Records, this is the world's longest bridge over water at 41.58 kilometers (25.84 mi).

Designed to carry 30,000 vehicles per day but it sees only about one-third that amount.

The construction project also included an undersea tunnel along the same route.

Source: Financial Times
China’s Overinvestment – Unbalanced and Unsustainable

New Century Global Center in Chengdu – “World’s Largest Building” opened in mid-2013 with 5.5 million sq. ft. (511,000 m²) of floor space complete with office area, shopping mall, two five-star 1,000-room hotels, and artificial oceanfront which can accommodate 6,000 visitors on the beach.

For comparison, the New Century Global Center has enough space to hold:

3 Pentagon Buildings…

… or 20 Sydney Opera Houses

Source: NBCNews
Since 2009 the Chinese government has stopped releasing information on empty apartments. However, in 2010, China’s State Grid reported 64.5 million apartment units – enough housing for approximately 200 million people – used no electricity for at least six consecutive months.

Source: CEIC; Thompson Datastream; Capital Economics; China National Bureau of Statistics; New York Times
China’s Growing Debt Level – A Looming Time Bomb?

China’s Debt to GDP (%)

- Estimates point to levels of 250% next year and 265% in 2016
- China’s debt to GDP ratio is still increasing

One key question is exactly how big the debt problem really is – even the Chinese government seeks to grapple with this issue

Source: Fitch; Wall Street Journal; Economist Intelligence Unit; Bloomberg
Rapid Credit Growth Precedes Busts – Recent Comparisons

Five Credit Bubbles
Rapid Credit Growth Precedes the Busts

Debt/GDP Danger Zone

Source: Fitch; GMO
According to Fitch, from the end of 2008 through the end of 2013, banking sector assets increased by about $14 trillion.

Equivalent to the size of the entire US commercial banking sector.

However, the dramatic increase in credit is failing to generate corresponding GDP growth.
Diminishing Returns – Deteriorating Asset Quality

A dramatic rise in credit should result in a corresponding increase in non-performing loans.

However, China’s official NPL rate is about 1%...less than half the average rate of the world’s top 50 banks.

Such a low NPL rate in the midst of a credit boom indicates that banks are likely just rolling over the maturing loans.

This just ‘kicks the can’ into the future and makes eventual resolution more difficult.

Source: The Economist; Fitch; Wall Street Journal
China’s Shadow Banking System – Looming Over the Economy

**Into the shadows**
Growth of different forms of credit in China

<table>
<thead>
<tr>
<th>As % of GDP</th>
<th>2009</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank loans</td>
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<td></td>
</tr>
<tr>
<td>“Entrusted” loans</td>
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<td></td>
</tr>
<tr>
<td>“Trust” loans</td>
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</tbody>
</table>

Most of China’s loans come from the state-owned banks, and ten years ago these were essentially the source of all lending in China.

However, recent years have seen an increase in the shadow banking sector including:
- Entrusted Loans – loans from cash-rich SOEs to other companies unable to borrow from banks
- Trust & Wealth Management Products – creative ways designed to make risky corporate loans look like safer lending between banks or are sold to retail investors (and thus avoiding a bank’s capital and loan-to-deposit ratio requirements)

Shadow banking loans tend to go risky sectors showing signs of overinvestment such as property and steel...ones shut out from state bank lending...but the cash-rich companies who lend to them through “entrusted loans” risk being dragged down themselves.

Over $400 billion in trust products are due to mature in 2014.

Source: The Economist; OECD
Cracks in the Debt Dam – Notable Recent Defaults

Zhenfu Energy Group

Zhejiang Xingrun Real Estate Co.

Premier Li Keqiang stated that future defaults on bonds and other financial products are unavoidable.

A Possible ‘Catch the Big, Release the Small’ Approach to Bailouts

Source: Bloomberg; Wall Street Journal; China Daily
The China Industrial Complex – A Partially Reformed Economy

China has an economy stuck in transition:

Approximately 50% of China’s GDP comes from state-owned or controlled companies which dominate key industries.

In recent years there has been a general abandonment of state-sector reform, replaced by a renewed emphasis on the state’s direct role in the economy.

In contrast to the reforms announced in November 2013, the state sector remains a “foundation” of the economy and the “Socialism with Chinese Characteristics” system.

As the economy inevitably slows and banks continue to lend to under-performing companies, China is at risk of creating a hoard of “zombie companies” and “ghost cities.”

Continuation of 国进民退 “The state advances while the people retreat.”
Auto factories in China are operating at capacity utilization levels around 75%... …below the 80% typically needed for profitability.

The China Industrial Complex – Producing More Than It Sells

In October 2013 China’s State Council noted five key sectors with serious overcapacity

Sectors with Serious Overcapacity
- Cement
- Aluminum
- Sheet Glass
- Shipping
- Steel

In November 2013 the National Development and Reform Commission (NDRC) announced that in the first half of the year 21 of 39 sectors had greater than a quarter of total capacity standing idle.
China’s Designated ‘Strategic’ and ‘Pillar’ Industries are Showing Signs of Weakness

China’s “Strategic Industries” include:
• Defense
• Electric Power and Grid
• Petroleum and Petrochemical
• Telecommunications
• Coal
• Civil Aviation
• Shipping

China’s “Pillar Industries” include:
• Equipment Manufacturing
• Automotive
• Information Technology
• Construction
• Iron & Steel
• Non-Ferrous Metals
• Chemicals
• Surveying and Design

Top Sectors Showing Signs of Distress*

- Real Estate
- Construction - Machinery, Materials & Engineering
- Industrial
- Technology, Media, and Telecommunications
- Chemicals
- Consumer Products & Retail
- Shipping & Transportation
- Commodities
- Steel
- Energy
- Automotive

*Chinese companies listed in Shanghai, Shenzhen, and Hong Kong with an Altman Z Score Indicating Distress

Chinese company debt equivalent to twice the size of Ireland’s economy…a record 2.6 trillion yuan ($427 billion)… will come due in 2014
The End of the Export-Led Development Model

Export-led growth provided the main platform for development of Asia’s major economies including Japan and the Four Tiger Economies.

China initially followed this model by opening its economy to foreign investment with the initial principle of “Comeudded加工” (“Bring in materials and add labor”).

Exports no longer provide a main source of growth for China’s economy.

Source: Nordea Markets; Reuters Ecowin
The End of Cheap China

Over the past twenty years China has grown to become the “Workshop of the World,” but now structural trends are resulting in a shift away from China as the low-cost country of choice.

As early as 2010, manufacturing costs in China already were less competitive when compared with other manufacturing locations such as Vietnam and Mexico.

Source: AlixPartners analysis
The End of Cheap China

Over the past twenty years China has grown to become the “Workshop of the World,” but now structural trends are resulting in a shift away from China as the low-cost country of choice.

Cost increases in China may result in manufacturing costs rising to meet US landed cost as early as next year.

Source: AlixPartners analysis
Productivity: Urbanization Largely Complete?

- China reports that approximately 50-55% of its population has been urbanized.
- It is presumed that further urbanization will help sustain GDP growth.
- However, an “urban center” in China is defined as 1,500 people per square kilometer.
- For comparison: the US Census Bureau identifies an urban area as having a population density of at least 1,000 people per square mile (or 386 people per square kilometer).

By China’s definition of an ‘urban center’, Houston (4th largest city in America with 2.2 million people) does not qualify as a city.

So, either the US has a great urbanization opportunity… …or China is much more urbanized than perceived… and economic benefits from the urbanization process have already largely been realized.

Source: Vikram Mansharamani, Boombustology
Challenges to Rebalancing – Greater Concentration of Wealth

China’s Gini coefficient has been trending in the wrong direction:

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
<th>2012</th>
<th>2014*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>0.412</td>
<td>0.425</td>
<td>0.470</td>
<td>0.474</td>
<td>0.550</td>
</tr>
</tbody>
</table>

The Gini Coefficient is a measure of income distribution, ranging between 0 (completely equal) and 1 (completely unequal).

For comparison, Gini ratios for other countries include:

- South Africa: 0.631
- USA: 0.370

Among the OECD countries the Gini coefficient ranges between 0.24 to 0.49

* According to researchers at the University of Michigan, China’s Gini coefficient is now 0.55, indicating a severe gap between rich and poor

The Chinese government recognizes the seriousness of the problem.
Another Challenge - China’s Chronic Corruption Problem

Reiterating comments made by other top leaders, Communist Party Secretary Xi Jinping stated that corruption could "kill the Party and ruin the country".

In 2011 the People’s Bank of China released a report – attributed to the Chinese Academy of Social Sciences - which said up to 18,000 public officials have fled China between 1995 and 2008 with stolen assets totaling 800 billion Yuan (or approximately $100 billion US Dollars).

On average, this equates to about 44 million Yuan (or about US$5.5 million) per official…with 3 to 4 officials fleeing daily.

Source: 中国新闻网China News Service; The Wall Street Journal
Further Comparisons – The Bursting of Japan’s Bubble

The bursting of Japan’s bubble economy coincided with three trends:
1) increase in credit,
2) increase in real estate prices, and
3) a demographic shift to an aging population.

Source: Bank of Japan
Further Comparisons – The Bursting of Japan’s Bubble

Population Change, Credit Expansion and Asset Price: China

The same trends are occurring in China.
The demographic turning point looks to be just about one year away, in 2015.

Source: United Nations; Zhongfang Shanghai Real Estate Index Office, National Bureau of Statistics, People’s Bank of China

Source: Bank of Japan
The Implications of China’s Slowdown – Global Impact

Economic slowdown in China is not a zero-sum game; it carries a significant impact globally and to some economies in particular. China is the biggest or second-biggest trading partner for 78 countries/regions. Some of China’s top trading partners include:

- Angola
- Costa Rica
- Philippines
- Argentina
- Germany
- Russia
- Australia
- India
- Saudi Arabia
- Brazil
- Indonesia
- Singapore
- Burma
- Israel
- South Africa
- Cameroon
- Japan
- Taiwan
- Chad
- South Korea
- Thailand
- Chile
- Malaysia
- United States
- Congo
- New Zealand
- Vietnam

Source: CIA World Factbook; Wall Street Journal

AlixPartners
Impact on Foreign Investments in China – A Bridge Too Far

China has grown at break-neck speed over the past decade; however, investment decisions and business plans based on outmoded high-growth projections will be eroded by China’s changing economy, resulting in “A Bridge Too Far” syndrome.

Although there will be winners and losers among sectors and individual companies, China’s structural economic slowdown will produce under-performing operations as actual results come in below forecasts and expectations.
Key Operational Challenges Facing Companies in China

• **Shortage of Management Talent**
  Shortages of managers and employees with the professional and technical skills to fill key roles are common. High turnover is the norm across all businesses.

• **Weak Accounting & Finance Function**
  This is a common characteristic among emerging growth companies. Combined with a general shortage of management talent, this results in a general lack of transparency and visibility into operations, and tends to result in less-than-robust internal controls.

• **Fierce Competition and Overcapacity**
  Multinationals face both domestic competitors and other foreign multinationals ramping up operations. Competition is often greater than anticipated, particularly from the state-owned sectors.

• **Restrictive Regulatory Environment**
  Depending upon the business and industry, some foreign companies are required to work with certain state-owned partners, or are completely shut out of the market.

Success requires a flexible, strategic approach
# Doing Business in China – Operational Challenges


<table>
<thead>
<tr>
<th>1.</th>
<th>Cost increases</th>
</tr>
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<tbody>
<tr>
<td>2.</td>
<td>Competition with Chinese companies in China</td>
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<tr>
<td>3. [tie]</td>
<td>Administrative licensing</td>
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<tr>
<td>3. [tie]</td>
<td>Human resources: Talent recruitment and retention</td>
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<tr>
<td>5.</td>
<td>Intellectual property rights enforcement</td>
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<tr>
<td>6.</td>
<td>Uneven enforcement or implementation of Chinese laws</td>
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<td>7.</td>
<td>Nondiscrimination/national treatment</td>
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<td>8.</td>
<td>Transparency</td>
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<td>9.</td>
<td>Standards and conformity assessment</td>
</tr>
<tr>
<td>10.</td>
<td>Foreign investment restrictions</td>
</tr>
</tbody>
</table>

These issues all point to greater downward pressure on margins, upward pressure on costs, and regulatory compliance challenges (especially the FCPA).

China Has Become a More Challenging Place for Business

Signs of protectionism in China

- Administrative licensing: 61%
- Tighter enforcement of rules against foreign companies: 49%
- Direct subsidies or tax incentives for domestic companies: 44%
- Standards setting: 42%
- Government pressure to favor Chinese-owned companies: 32%
- Access to government procurement market: 29%
- Unequal adjudication involving foreign companies: 25%
- M&A review/approvals: 19%
- Other: 10%
- Not seeing signs of protectionism: 8%

Multiple responses allowed.

Source: USCBC 2013 China Business Environment Survey
Multinationals Now Starting to See China Revenues Decline

Revenue from China business compared to the previous year

- **2011**:
  - Increased by more than 20 percent: 41%
  - Increased by 10-20 percent: 14%
  - Increased by less than 10 percent: 7%
  - Decreased by less than 10 percent: 0%
  - Decreased by 10-20 percent: 0%
  - Decreased by more than 20 percent: 0%
  - Was unchanged: 0%

- **2012**:
  - Increased by more than 20 percent: 38%
  - Increased by 10-20 percent: 30%
  - Increased by less than 10 percent: 17%
  - Decreased by less than 10 percent: 3%
  - Decreased by 10-20 percent: 0%
  - Decreased by more than 20 percent: 0%
  - Was unchanged: 0%

- **2013**:
  - Increased by more than 20 percent: 34%
  - Increased by 10-20 percent: 26%
  - Increased by less than 10 percent: 12%
  - Decreased by less than 10 percent: 10%
  - Decreased by 10-20 percent: 10%
  - Decreased by more than 20 percent: 5%
  - Was unchanged: 3%

Source: USCBC 2013 China Business Environment Survey
Profitability of China Operations Now Trending Downward

Source: USCBC 2013 China Business Environment Survey
Costs Continually Increasing...in a Slower Growth Environment

Are rising costs for your company’s operations in China a concern?

- 2007: 12% Yes, 88% No
- 2008: 10% Yes, 90% No
- 2009: 30% Yes, 70% No
- 2010: 10% Yes, 90% No
- 2011: 15% Yes, 85% No
- 2012: 10% Yes, 90% No
- 2013: 4% Yes, 96% No

Source: USCBC 2013 China Business Environment Survey
Doing Business in China – Warning Signs

Warning signs of China’s structural slowdown impacting a company may include:

- Unrealistic plans or forecasts based on changing economic conditions
- Decline in profitability or continued anemic performance over time
- Higher-than-expected operating expenses
- Lower-than-expected revenues
- Gaps or inconsistencies in management financial reports
- Lack of visibility or detailed information as to the causes of the underperformance
- Increasing inventories and/or receivables days outstanding
Addressing the Impact – Rationalizing Operations

For many investments, strategic owners and financial sponsors will need to take decisive action in order to unlock or retain value.

<table>
<thead>
<tr>
<th>Examination of the company’s financial reporting to verify the true situation</th>
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<tbody>
<tr>
<td>Appropriate cost rationalization measures</td>
</tr>
<tr>
<td>Re-evaluation of customers and revenue channels</td>
</tr>
<tr>
<td>Supply chain and manufacturing footprint optimization</td>
</tr>
<tr>
<td>Assessing merger and acquisition opportunities</td>
</tr>
<tr>
<td>Focus on core competencies and potential wind-down of select operations</td>
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</tbody>
</table>

AlixPartners has experienced professionals who can help evaluate the warning signs and assess the true condition of the business, and then assist strategic and financial stake-holders to take the right steps to fix the situation.

Right-sizing the business to profitability
Recently Stated Reform Agenda – All the Right Moves…But

- Reform Agenda from the recent Third Plenum of the 18\textsuperscript{th} CCP Congress include:
  - \textbf{Improving the Investment Environment}
    - Unified investment regime nationwide for domestic and foreign companies (anything not on a ‘negative list’)
    - Free Trade Zones to expand investment openings in finance, education, health, construction, telecom, auditing/accounting, and manufacturing
  - \textbf{SOE Reform}
    - Despite nod to the ‘non-public” economy, SOEs remain the primary foundation of China’s system (Socialism with Chinese Characteristics)
    - Increase in percentage of profits handed over to the state, from 5-15\% to 30\%
  - \textbf{Financial Sector Reform}
    - Liberalization of interest rates
    - Allowing private (domestic) capital to set up small & medium sized financial institutions
    - Establishment of a national deposit insurance system
  - \textbf{Tax Reform}
    - Measures aimed to increase legitimate revenues for local and central governments
    - VAT, high energy consumption, pollution, and property taxes
  - \textbf{Social}
    - Land rights, household registration, and the one-child policy

\begin{center}
\textbf{Great intentions, but few details on the speed, nature, and quality of implementation}
\end{center}

\textit{Source: US-China Business Council}
Despite the Challenges, China’s Best Days Lie Ahead

• In any scenario, China remains a top economy, key global economic driver, and a critical market to be in

• In the short-to-medium term there will be winners and losers in each sector, offering attractive investment opportunities

• Underperforming investments based on overly-high expectations will need to be addressed

• Despite challenges in the short and medium term, China’s best days lie ahead, as long as reform continues
Turn to AlixPartners When It Really Matters

We’re a global firm of senior business and consulting professionals with:

- An international presence
- More than 1,000 professionals
- 18 global offices

In urgent, high-impact situations - when it really matters - we specialize in:

- Improving corporate financial and operational performance
- Executing corporate turnarounds
- Providing litigation consulting and forensic accounting services
Brent helps companies and their stakeholders in the areas of mergers & acquisitions, dispute resolution consulting, internal investigations, restructuring & turnarounds, and interim management roles. Brent has 20 years of China business experience which includes senior management positions consisting of Chief Representative, COO/Deputy General Manager, CFO/Treasurer, Director of Business Development, and Chief Compliance Officer.

Brent is a Certified Insolvency and Restructuring Advisor, and he has led comprehensive turnaround programs in China to improve under-performing businesses and to fix financial reporting, liquidity, forecasting, and operational issues. His turnaround experience includes addressing areas such as simplifying organizational structures, consolidating sales & service, assessing product and customer profitability, consolidating technical operations, evaluating suppliers, implementing standardized budgeting & reporting, redesigning support functions, and reducing non-core costs.

As a Certified Fraud Examiner, Brent has provided dispute and forensic consulting services in internal investigations, purchase price and other commercial disputes, as well as criminal prosecution. Brent also has testified in court as an expert witness in fraud-related matters. From his experience in dealing with fraud-related matters, Brent applies a critical sense of skepticism necessary to effectively evaluate the financial data and inputs obtained from operations on the ground.

Brent is fluent in Mandarin Chinese.

Association of Insolvency and Restructuring Advisors
Association of Certified Fraud Examiners
Turnaround Management Association

Brent holds a masters degree from Yale University and is a *Summa Cum Laude* graduate of the University of Minnesota.
AlixPartners is ready to field a team of relevant experts whenever and wherever they are needed. Our professionals speak more than 50 languages and have experience in every corner of the world.

Call us. We’ll be there when it really matters.
China Operational Challenges – Beyond Macroeconomics
Chairman – Gary Riley Sr.

- CEO/COO of six global companies over past 25 years
- Involved in 19 and counting Chinese JV’s
- Relocated or opened 12 operations in Asia
- Global change leader who transforms under performing companies – in Asia, Europe and USA
- Created significant value for PE investors
- GDP growth is down 25%, but still high
- Manufacturing share of GDP growth is down nearly 40%
- Exports of are down YOY
- Labor is no longer the lowest in world
- More difficult to keep good people
- Input costs like raw material and energy are generally higher than the USA or Mexico today
- Yuan has strengthened 30% over last 7 years
- Too much capacity in almost every industry – but not the right kind of capacity in most cases
- Not enough value add in the manufacturing segment
What Companies should do?

- Right Strategy to Create Value
- World Class Manufacturing – average company is a generation behind
- Innovation and Product Development – how do local companies and Sino-Western JV’s innovate to capture more of the value chain
- Rethink Supply Chains – equally applicable to western and local companies, today the wrong metrics drive wrong behavior
Approach – Value Creation Points

Strategic Action Agenda

- **Data-driven strategic plan**
  - 3-5 year view
  - Market, customer, competitor and operationally focused
  - Business Model selection

Build Great Team

- Retain and recruit best people available
- Develop a strong, “winning” culture and team, together.
- Reward performance

Getting it Done...

- Accelerate high return, new strategic investments
- Financial reporting and performance tracking to ensure accountability
- **KPI** - Joint plan so all stakeholders contribute

Align on strategic directions and where to focus

People make the difference

Driving and Achieving “Full Potential”
ASIMCO Group – Vision to Value

- Strategic Direction – Solutions Strategy
- Intimate local market knowledge
- Customer relationships drive understanding of true needs – they look to ASIMCO for Global trends
- People development – right senior leadership team
- Product design philosophy focuses Group efforts
- Program/project management
- Operational excellence through ASIMCO Operating System (AOS)
- Financial control
- Supportive local partners
Two Examples of Success

- Multiple product supplier to Chinese CV’s
  – Increases sales by 30% in three years
  – Reduced headcount by 25%
  – Increased EBITDA from 5% to 19%

- Launched alternative fuel engine management and fuel system to Chinese CV’s
  – Grew sales from zero to $100 million in 5 years
  – Became market leader of carbon reduction of CV’s
- Some Chinese manufacturers are world class, but 80% are not, especially SME’s
- Chinese manufacturers can no longer rely on low cost, low skill labor
- Must embrace global quality practices
- Must develop and Deploy management and Operating Systems that start with people
Must Measure and Improve

- Health and Safety
- People Development
- QCD – Quality, Cost and Delivery – Service
- Productivity
- Supply Chain – control and improve
- Continuous Improvement
- Growth and Product Development
ASIMCO Operating System
Driven by Value Chains

Productivity Value Chain
- Supplier Cost
- Manufacturing Efficiency
- Customer QCD

Growth Value Chain
- Product Development
- Program Management

Capability Development Value Chain
- EHS Regulatory
- Management Development
<table>
<thead>
<tr>
<th>Delivery</th>
<th>Quality</th>
<th>Productivity</th>
<th>Safety</th>
<th>CI</th>
<th>Sales &amp; Marketing</th>
<th>New Product Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSL MTS</td>
<td>PTSL ATO</td>
<td>Maxim 2</td>
<td>Customer PPM</td>
<td>P/M Dispo</td>
<td>Productivity – Labor &amp; Mfg Overhead as a % of Revenue</td>
<td>TCIR</td>
</tr>
<tr>
<td>50%</td>
<td>50%</td>
<td>35%</td>
<td>65%</td>
<td>100%</td>
<td>100%</td>
<td>40%</td>
</tr>
<tr>
<td>125%</td>
<td>94.0%</td>
<td>92.0%</td>
<td>11</td>
<td>800</td>
<td>19.0%</td>
<td>0.0</td>
</tr>
<tr>
<td>100%</td>
<td>90.0%</td>
<td>90.0%</td>
<td>9</td>
<td>900</td>
<td>19.5%</td>
<td>1.0</td>
</tr>
<tr>
<td>75%</td>
<td>89.5%</td>
<td>89.5%</td>
<td>---</td>
<td>1200</td>
<td>20.0%</td>
<td>2.0</td>
</tr>
<tr>
<td>50%</td>
<td>89.0%</td>
<td>89.0%</td>
<td>5</td>
<td>1500</td>
<td>20.5%</td>
<td>---</td>
</tr>
<tr>
<td>25%</td>
<td>88.5%</td>
<td>88.5%</td>
<td>---</td>
<td>1800</td>
<td>21.5%</td>
<td>---</td>
</tr>
<tr>
<td>-25%</td>
<td>88%</td>
<td>85%</td>
<td>2</td>
<td>2100</td>
<td>22.5%</td>
<td>2.5</td>
</tr>
</tbody>
</table>

- To be introduced in Qtr 2, will be 25% of total
- To be introduced in Qtr 2, will be 10% of total

**Tulsa 2012 - Line of Sight**
Lean Manufacturing
Process/Quality Document

Operation Sequence

Magnet Block

<table>
<thead>
<tr>
<th>From: Weigh-up</th>
<th>To: Compaction</th>
</tr>
</thead>
</table>

Parts
- Eclipse

Quality
- Part height
- Part weight
- Visual
- Cleanliness of cavity
- Cleanliness of toolings

Safety
- 1. Oil leaks
- 2. Powder and green part reactivity

Work Sequence
1. Deliver full vials tote box to Compaction work table.
2. Fill die cavity with 1 vial per operation.
3. Dispose empty vial onto dedicated vials tote box.
4. Activate Compaction process cycle.
5. Pickup green part with manual pick & place.
6. Depowder green part.
7. Load part into rubber mold.
8. Place fully loaded rubber mold into primary vacuum plastic bag.
10. Place vacuum placed mold into dedicated tote box on the shelved storage table.

Work table 1
- 1. Die tube
- 2. Die cavity cleaning tools
- 3. Funnel

Work table 2
- 1. Depower m/c
- 2. Plastic vacuum bags
- 3. Rubber molds

Op 1
- 1. Compaction Press
- 2. Control Panel
- 3. Storage Shelves
- 4. Vacuum Packer
- 5. Weigh-up Station

Op 2
- 1. CIP Station

6/21/2004
### Sliced Magnet Controls

<table>
<thead>
<tr>
<th>Shanghai Operating Parameters</th>
<th>SH 1</th>
<th>SH 2</th>
<th>SH 3</th>
<th>SH 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Speed Rate 速度比例</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Feed Rate 进料比例</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Coolant Flow Rate 冷却液速度</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Units per hour (Uph) 每小时数量</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Cycle Time 周期</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Shanghai Process Controls

<table>
<thead>
<tr>
<th>Shanghai Process Controls</th>
<th>Trigger Limits 报警限</th>
<th>Equipment / Gages</th>
<th>SPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 No Chipped 无缺角</td>
<td>AQL 0.40%, Level II</td>
<td>Unaided light source</td>
<td>p-chart</td>
</tr>
<tr>
<td>2 No Cracks 无裂纹</td>
<td>AQL 0.40%, Level II</td>
<td>Unaided light source</td>
<td>p-chart</td>
</tr>
<tr>
<td>3 No Porosity 无气孔</td>
<td>AQL 0.40%, Level II</td>
<td>Unaided light source</td>
<td>p-chart</td>
</tr>
<tr>
<td>4 No Scratches 无刮痕</td>
<td>AQL 0.40%, Level II</td>
<td>Unaided light source</td>
<td>p-chart</td>
</tr>
<tr>
<td>5 No Drag Marks 无拖痕</td>
<td>AQL 0.40%, Level II</td>
<td>Unaided light source</td>
<td>p-chart</td>
</tr>
</tbody>
</table>

### Visual Controls

<table>
<thead>
<tr>
<th>Visual Controls</th>
<th>Trigger Limits 报警限</th>
<th>Equipment / Gages</th>
<th>SPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Innovation and Product Development

- Track mega trends
- Change the mindset
- Increased Reliability Demands – sell better, not more
- Sell Value, not cost
- Help customers solve problems and provide solutions, not the same as others
- Design for market you serve
### Growth Opportunity

**New Products**

- Improved emissions
- Fuel Price Policy Reform
- Safety Concerns
- Improved fleet management
- Vehicle exports

<table>
<thead>
<tr>
<th>Opportunity</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved emissions</td>
<td>Higher technology</td>
</tr>
<tr>
<td>Fuel Price Policy Reform</td>
<td>Higher technology</td>
</tr>
<tr>
<td>Safety Concerns</td>
<td>Higher technology</td>
</tr>
<tr>
<td>Improved fleet management</td>
<td>Lifetime cost of ownership considerations</td>
</tr>
<tr>
<td>Vehicle exports</td>
<td>Higher technology, tailored for the specific markets</td>
</tr>
</tbody>
</table>

Component value growth –20% CAGR >
### Current Product Portfolio

<table>
<thead>
<tr>
<th>Product</th>
<th>Price (RMB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro II Fuel Injector</td>
<td>80</td>
</tr>
<tr>
<td>Euro II Fuel Pump</td>
<td>1,750</td>
</tr>
<tr>
<td>Euro II Piston Rings</td>
<td>7</td>
</tr>
<tr>
<td>Direct Drive Starter</td>
<td>330</td>
</tr>
<tr>
<td>Automotive Starter</td>
<td>200</td>
</tr>
</tbody>
</table>

### Next Generation Product Portfolio

<table>
<thead>
<tr>
<th>Product</th>
<th>Price (RMB)</th>
<th>Development Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro IV Common Rail Injector</td>
<td>650</td>
<td>Prototype Testing</td>
</tr>
<tr>
<td>Euro III Fuel Pump</td>
<td>4,500</td>
<td>In Production</td>
</tr>
<tr>
<td>Euro III Piston Rings</td>
<td>17</td>
<td>In Production</td>
</tr>
<tr>
<td>Gear-Reduction Starter</td>
<td>650</td>
<td>In Production</td>
</tr>
<tr>
<td>Automotive Stop/Start Starter</td>
<td>700</td>
<td>In Development</td>
</tr>
</tbody>
</table>
OVERDRIVE – New Prod. Dev.

Metric: Percentage of Goals Hit

<table>
<thead>
<tr>
<th>Payout Percentage</th>
<th>New Product Dev. Goals Hit</th>
</tr>
</thead>
<tbody>
<tr>
<td>125%</td>
<td>100%</td>
</tr>
<tr>
<td>100%</td>
<td>90%</td>
</tr>
<tr>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>25%</td>
<td>65%</td>
</tr>
<tr>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>-25%</td>
<td>50%</td>
</tr>
</tbody>
</table>

3 Goals Per Project:
- Product Cost
- Development Cost
- Production Date

Must have at least Three projects (9 goals) to be eligible.

Accomplishments / Misses

1. **A** – PV450 Pressure Governor released on-time and meeting all three targets.
2. **M** – EICS is in production but all Genesis requirements are still not yet complete. Only the user manual remains undone…push to finish the manual.

Performance:

8 of 9 Goals achieved in the last three months

<table>
<thead>
<tr>
<th></th>
<th>Product Cost</th>
<th>Development Cost</th>
<th>Production Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec</td>
<td>✓</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>NACCO/Kubota Translator</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PV480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Feb</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>PV450 Pressure Governor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar</td>
<td>?</td>
<td>?</td>
<td>✗</td>
</tr>
<tr>
<td></td>
<td>EICS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>May</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Jun</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>HV300 - BRP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td></td>
<td>HPR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sep</td>
<td>PowerPro - Godwin</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fusion PLC R1.0</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>

What can we do?

1. Get the past due projects (EICS) completed and released so that they will no longer impact new overdrive goals.
2. Focus on the HPR, HV300, and PV300 projects releasing in June and July. This is our next chance to achieve a production launch date goal.
3. Inform Program Managers of any conflicts or delays to new product development activities.
4. Be proactive with NPD efforts wherever you can. Don’t wait for a Program Manager to push you along. Get ahead of the PMs wherever you can.
- In 2009, I had dinner with the GM of DFAC Truck and we discussed Chinese and USA 50 MT trucks
- A 390 HP DFAC truck costs $40,000 while its USA counterpart cost $120,000 – why
- Design Parameters - B50 Life
Rethink Supply Chains

- Fewer, better suppliers
- Think of suppliers as partners
- Assess the total cost of a product or system purchased, rather than purchase price – total lifetime cost of ownership
- Apply APQP or your Operating System to supplier selection and management
Critical Elements

- Develop relationships
- Must have Win/Win Philosophy
- Senior level involvement
- Clear roles, responsibilities and requirements
- Establish Quality Gate
- Continual Improvement
How We Qualify the New Factory

(1) MPE Manufacturing Process Evaluation

To conduct an objective evaluation of the Manufacturing Process to assess the ability in producing Quality Product with established process after site setup.

Elements to Assess are:
(1) Documentation
(2) Operator Training & Certification
(3) Equipment Calibration & Maintenance
(4) Process Control & SPC Usage
(5) Material identification & Control
(6) General Housekeeping

(2) MPR Manufacturing Process Review

To review manufacturing Process & Quality Control Plan to assure Key Process Input & Output Variable meeting the desired Specification.

Elements to Assess are:
(1) Process SPEC.
(2) Process STEP.
(3) Process Management Plan
(4) Quality Control Plan
# Supplier Sourcing/Survey Report --- Example

**SUPPLIER:** NingBo BeiLun ZhengDa Spring Factory  
**Product:** ECS Spring  
**Date:** 2007-3-14

**PROCESS AUDIT SUMMARY**  
**Site:** NingBo  
**By:** Bert Jenkins, Angie Lucas, Grace  
**Auditee(s):** Wei Zhang/Zheng Yu Ding

**AUDITOR:** 02'07

## RESULTS:

<table>
<thead>
<tr>
<th>CHAP</th>
<th>Answers</th>
<th>Non applicable</th>
<th>Non-existent</th>
<th>Insufficient</th>
<th>Acceptable</th>
<th>Good</th>
<th>Corrective actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHAP 1: Documentation</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>CHAP 2: Purchasing - Incoming product - Storage</td>
<td>32</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>12</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>CHAP 3: Manufacturing workstations</td>
<td>28</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>13</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>CHAP 4: Packaging - Storage of finished product - Shipping</td>
<td>15</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>13</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHAP 5: Inspection - Testing - Metrology - Laboratory</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>CHAP 6: Personnel - Environment - Safety</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL:** 96  7  6  1  52  30  0

**CORRECTIVE PLAN:**

<table>
<thead>
<tr>
<th>LN</th>
<th>Corrective action</th>
<th>PLAN</th>
<th>DO</th>
<th>CHECK</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Work instruction on site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Traceability shall go through all workshops</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Calibration need reflect on all testing machine, Maintenance need reflect on all machine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**COMMENTS:**

Manufacturing equipment is a combination of the oldest and newest; the older equipment and newer equipment are in separate areas, the newer equipment is generally Taiwanese & new condition. This new equipment is highly capable with much servo & electronic system that continuously measures the free length of each spring produced. This system performs two functions.

1) It sorts out under/over length springs.
2) It continuously adjusts the machine pitch setting to minimize length variances. Making the ECS brush springs require this type system. You cannot hold our spring load requirements without using an automated system to control the spring length. This Ningbo Spring had one machine of the correct size for our springs that was fitted with this system. This machine was running & the gage system was operating. No doubt, this machine is capable of producing springs that meet our requirements. The owner told us he has ordered 10 new electronic gage systems to add to other machines. This electronic gage system is usually an add-on & generally not from the machine builder. We told him this system was required for our tolerances. Testing equipment was good. Housekeeping, machines & lighting was good. Can assess the peoples skills from jobs they were running + complex spring shapes & forms using multi-axis CNC controlled machines.

**SIGNATURE OF THE AUDITOR:**  
Bert Jenkins, Angie Lucas, Grace Wang, Angie LoH

**SIGNATURE OF THE AUDITEE:**  
Zhen Zheng Qiu
Gears – A Case Study

- USA customer
- Chinese supplier
- Neither side was happy and no sales or products
- Quality Gate implemented
- NGS manages today
Western SME’s need to be in or thinking of entering the Chinese market

I see great potential for Chinese manufacturing in the years to come, but management of these companies must evolve

Strategy drives Structure – world class manufacturing cannot fix a bad strategy
# NGS Benefits to the Customers

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make Life Easier for Our Customers</td>
<td>NGS has personnel on the ground in Asia to deal with detailed daily tasks so our customers can focus on what is truly important – <em>Growing Their Business</em></td>
</tr>
<tr>
<td>Save Time</td>
<td>NGS has an <em>Established Network</em> of contacts and suppliers in multiple LCC locations and will leverage them to achieve the goals of our customers as quickly as possible</td>
</tr>
<tr>
<td>Reduce Operating Costs</td>
<td>NGS will work to get you the <em>Best Price</em> on all products sourced and can utilize its internal resources to develop <em>Innovative Solutions</em> to improve total cost</td>
</tr>
<tr>
<td>Increase Revenue</td>
<td>NGS can find <em>Additional Production Capacity and Develop Alternate Products</em> to improve customer service and expand your product offering</td>
</tr>
<tr>
<td>Lower Risk</td>
<td>The Experienced NGS Team can manage the quality, service and cost risks of LCC sourcing so you do not have to worry</td>
</tr>
</tbody>
</table>
No 10 Chuang Ye Road 3
Ningbo Free Trade West Zone
Beilun
Ningbo Zhejiang
315800
China
Phone : +86 574 8615 0883
Fax : +86 574 8617 3533
Email : general@NingboGlobalS.com
Website : www.Ningboglobalsourcing.com
Brent helps companies and their stakeholders in the areas of mergers & acquisitions, dispute resolution consulting, internal investigations, restructuring & turnarounds, and interim management roles. Brent has 20 years of China business experience which includes senior management positions consisting of Chief Representative, COO/Deputy General Manager, CFO/Treasurer, Director of Business Development, and Chief Compliance Officer.

Brent is a Certified Insolvency and Restructuring Advisor, and he has led comprehensive turnaround programs in China to improve under-performing businesses and to fix financial reporting, liquidity, forecasting, and operational issues. His turnaround experience includes addressing areas such as simplifying organizational structures, consolidating sales & service, assessing product and customer profitability, consolidating technical operations, evaluating suppliers, implementing standardized budgeting & reporting, redesigning support functions, and reducing non-core costs.

As a Certified Fraud Examiner, Brent has provided dispute and forensic consulting services in internal investigations, purchase price and other commercial disputes, as well as criminal prosecution. Brent also has testified in court as an expert witness in fraud-related matters. From his experience in dealing with fraud-related matters, Brent applies a critical sense of skepticism necessary to effectively evaluate the financial data and inputs obtained from operations on the ground.

Brent is fluent in Mandarin Chinese.

Association of Insolvency and Restructuring Advisors
Association of Certified Fraud Examiners
Turnaround Management Association

Brent holds a masters degree from Yale University and is a Summa Cum Laude graduate of the University of Minnesota.
NGS CHAIRMAN – Gary Riley Sr.

Gary Riley is a decisive, shrewd global executive and strategy architect. He has over 20 years of experience as a C-Level executive across many middle-market organizations and private equity owned companies. Gary has a proven track record of creating and growing shareholder value and leading global companies through financial crisis to profitability by managing strategic realignment and team building within the automotive, computer hardware, and consumer and business electronics sectors worldwide.

During his career he has successfully relocated five manufacturing plants to Asia, launched seven new production plants in China and Malaysia, and formed, managed or liquidated 19 JVs (China and Germany). He is recognized as expert in Asian and Chinese business, specifically in the commercial vehicle space, working with JVs and SOE partners in China. Key experience includes:

- Presently, Chairman and owner of Ningbo Global Sourcing and Chairman and partial owner of Plastival, Inc.
- Ending March 2013, Gary was the CEO of Enovation Controls LLC, a global supplier of natural gas vehicle fuel systems and gas compression technology operating in Asia, NA and EU.
- CEO of ASIMCO Technologies, an organization consisting of 10 JVs and 4 WOFE’s with 11,000 employees. ASIMCO is one of the largest foreign-owned Chinese automotive suppliers of commercial vehicle components. Over a two (2) year period, he increased EBITDA by 3 times and net profit by 15 times from 2008 to 2010 and completed a sale of the Company to Bain Capital.
- Served as President and CEO of Energy Conversion Systems, an organization with 11 plants in 8 countries (North America, Europe and Asia).
- Previously was COO of Magnequench, Inc., a global leader in rare earth magnets and magnetic assemblies.
- Was President and CEO of Xolox, a global privately owned manufacturer of OEM components for hard disk drives (data storage).
- CEO of Zollner Pistons for five (5) years, a global, privately owned OEM supplier of heavy-duty pistons and automotive components.
- Prior to this, was a Partner at Price Waterhouse in their M&A division.