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Summary of Speaker Presentations
Young & Partners Senior Chemical Executive Seminar
“Strategic, Financial, and Shareholder Issues for Chemical Executives”
October 26, 2006
Yale Club Ballroom
50 Vanderbilt Avenue - New York City

- 7:30 a.m. **Registration and Continental Breakfast**
- 8:00 a.m. **State of the Chemical Industry**
Peter Young, President, Young & Partners
- 8:30 a.m. **The Creation and Evolution of Rockwood**
Seifi Ghasemi, Chairman and Chief Executive Officer, Rockwood Specialties Group, Inc.
- 9:00 a.m. **Restructuring the European Chemical Industry: The Lanxess Example**
Dr. Axel C. Heitmann, Chairman of the Board of Management, Lanxess AG
- 9:30 a.m. **Case Studies in Value Creation: Transformational M&A**
David Lilley, Chairman, President and Chief Executive Officer, Cytec Industries
- 10:00 a.m. **Coffee Break**
- 10:30 a.m. **CEO Roundtable**
Moderator: Peter Young, President, Young & Partners
Seifi Ghasemi, Chairman and Chief Executive Officer, Rockwood Specialties Group, Inc.
Dr. Axel C. Heitmann, Chairman of the Board of Management, Lanxess AG
David Lilley, Chairman, President and Chief Executive Officer, Cytec Industries
- 11:30 a.m. **Building a Presence in China**
Sunil Kumar, President and Chief Executive Officer, International Specialty Products Inc.
- 12:00 p.m. **Luncheon Speaker**
Current Chemical Strategic, M&A and Financial Trends
Peter Young, President, Young & Partners
- 1:30 p.m. **Keynote Speaker**
The Case for Private Equity in the Chemical Industry
Chinh Chu, Senior Managing Director, The Blackstone Group
- 2:30 p.m. **Chemical Industry IPOs: Is the Window Closing?**
John E. Roberts, Senior Vice President, Buckingham Research Group
Peter Young, President, Young & Partners
- 3:15 p.m. **The Bio Revolution in Chemicals**
George S. Koutsaftes, Vice President, Young & Partners
Paul J. Caswell, Co-Founder and EVP International Business Development, Cathay Biotechnology Group
- 4:00 p.m. **Closing Comments**

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Summaries of the Speaker Presentations

(These summaries were prepared by Young & Partners and were not reviewed by the speakers.)

State of the Chemical Industry

Peter Young, President, Young & Partners

After years of difficult earnings, the chemical industry experienced a significant recovery that began at the end of 2003. Earnings have generally been positive for the industry, although there are significant differences among industry sectors. The commodity chemical industry is facing a transition period passing through its cyclical peak and adjusting to rising feedstock prices. In addition, ongoing structural changes are creating strategic challenges, with the shift of growth and production to China and expansions of capacity in the Middle East.



Stepping back from the details of individual companies and sectors, the chemical industry is doing well. Earnings and stock valuations are significantly better than just a few years ago. New technologies are being aggressively pursued in traditional chemistry as well as nanotechnology and biotech. Companies have been restructuring their businesses not only to turnaround ailing operations and business portfolios, but also to offensively move ahead of the structural changes in the industry, to accomplish a change in their business mix, or to increase shareholder value. Private equity has been an important partner in this restructuring.

This is significantly different from an industry that in the past tended to be slow to react and to be more defensive when it came to restructuring. In particular, the industry is aggressively moving to capture global shifts in markets (growth of the Chinese market and competition) and to defend against rising feedstock costs and geographic shifts (higher natural gas and oil prices and the shift of basic petrochemical feedstock capacity growth to the Middle East). Even in the area of public perception of the industry, progress is being made. However, there are real challenges ahead for the industry including: (a) a fragile global economic growth profile (particularly in the U.S. with increasing signs of slowdown), (b) the potential for a disruption of China's growth, (c) the dramatic shift in demand and downstream production to China, India and other regions due to cost advantages and relative market growth, (d) military and political fragility in the Middle East, (e) the increase natural gas and oil prices and price volatility, and (f) public policy and sentiment in Europe and the U.S. towards the chemical industry and negative policy and legislative effects.

The Creation and Evolution of Rockwood

Seifi Ghasemi, Chairman and Chief Executive Officer, Rockwood Specialties Group

In late 2000, Rockwood was formed when KKR purchased certain businesses of Laporte, PLC. After completing a number of acquisitions, Rockwood became a NYSE-listed public company in August of 2004. Today, the Company has 100 manufacturing facilities with manufacturing operations in 25 countries and over 10,800 employees. As of 9/30/06, Rockwood had pro-forma net sales of \$3.1 billion with pro-forma adjusted EBITDA margin of 18.3%. Historically, the Company has grown sales over 40% per year and has maintained consistent EBITDA margins of around 18%.



Rockwood's corporate strategy consists of managing a collection of self-sufficient, highly focused and accountable business units that have market and technology leadership in each business, high margins, and limited exposure to raw material price changes. For the successful implementation of its strategy, management believes in the adoption of a common culture throughout the organization with a focus on customer service, cash generation, and commitment to excellence.

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Rockwood is a product of ten acquisitions ranging in size from \$6 million to \$2.3 billion. The Company has successfully integrated these businesses by ensuring that existing businesses were performing before making another acquisition, ensuring that the board and senior management were fully involved and aligned on the rationale for each acquisition, and ensuring that all phases of the transaction were carefully planned and strategically executed.

Today, the Company has a well-diversified portfolio of world-class specialty chemicals and advanced materials businesses with strong margins and stable cash flow generation. It has leading positions and strong niche businesses protected by significant barriers to entry. Although Rockwood's products represent a small portion of customers' total end cost, they are critical to performance. Rockwood has successfully positioned itself so that it now enjoys significant organic growth opportunities as well as significant opportunities for bolt-on acquisitions.

Restructuring the European Chemical Industry: The Lanxess Example

Dr. Axel C. Heitmann, Chairman of the Board of Management, Lanxess AG

The chemical industry is undergoing a period of rapid and profound change which spans the globe. This change is driven, first and foremost, by the dueling forces of fragmentation and consolidation. Examples of fragmentation include the splitting up of Hoechst, ICI, and Akzo Nobel a few years ago. There have also been numerous mergers and acquisitions. Finally there have been a number of spin-offs including, of course, the spin-off from Bayer that gave birth to LANXESS.

Increasing levels of competition and changing global market dynamics are also reshaping today's global chemical industry. Specifically, the steady rise of new players in Asia and the Middle East represents a strong challenge to established chemical companies around the world, particularly in Europe. Today, an increasing number of Asian companies can be found among the top 50 competitors in the global chemical industry - companies that did not play any role at all until recently. Now these companies are gaining ground in the international rankings with breathtaking speed. These developments as well as commoditization are driving continuous margin pressure in the chemical industry.



It was into this turbulent environment of fragmentation and consolidation, increasing competition, and changing market dynamics that LANXESS was born. In the beginning, predictions of success for LANXESS were few and far between. Yet in less than two years LANXESS has made a successful turnaround and has proven the skeptics wrong. The Company's success can be attributed to a disciplined four-step plan: (1) cut internal costs to increase efficiency and improve performance, (2) restructure loss-making businesses by reducing headcount and closing plants to produce maximum profitability, (3) structure LANXESS like a portfolio of chemical companies in which the markets drive management decisions, and (4) proactively increase profitability through acquisitions.

LANXESS' successful strategy has been rewarded by recognition by the financial markets. The Company's stock price has outperformed chemical industry peers by as much as 20% since 2005, making LANXESS the only chemical company to enjoy double-digit growth during this time. Yet management believes that there is still a lot to be done and has established the following set of goals that will guarantee future growth and profitability: (1) in 2009, LANXESS aims to be level with its peer group in terms of profitability as measured by the EBITDA margin, (2) in 2009, there will be no LANXESS business with an EBITDA margin of less than 5 percent, and (3) in terms of finance, the Company will maintain its investment grade rating. Lanxess recognizes that only companies that are committed to market adaptability and increased efficiency will be able to navigate the increasingly complex global marketplace.

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Case Studies in Value Creation: Transformational M&A

David Lilley, Chairman, President and Chief Executive Officer, Cytec Industries

Cytec's growth strategy focuses on creating sustainable technology franchises by: (1) targeting 5-7% top line growth and double-digit EPS growth, (2) growing with new product introductions and directing existing products into new applications, (3) growing in areas such as Asia and Latin America, (4) growing with the market, and (5) continuing to enhance productivity through operational excellence.

Historically, Cytec has executed many transformational transactions. These transactions succeeded because Cytec established the following fundamental transactional requirements: (1) there should be an ongoing focus on organic growth, (2) there must be business ownership of the strategic plan, (3) the strategic plan must combine both organic and transformational plans to build a sustainable franchise, (4) there should be an avoidance of "diversification into Incompetence", (5) there should be a clear discrimination among growth, turnaround, and cash product lines, (6) there should be a separation of M&A transactional capabilities apart from the business, (7) key competencies should be established for "buying" by building business and functional integration expertise., and (8) there should be an understanding of the behavioral aspects relating to acting within a strategic framework by building in advance core competencies.



CEO Roundtable

Moderator: Peter Young, President, Young & Partners

Seifi Ghasemi, Chairman and Chief Executive Officer, Rockwood Specialties Group, Inc.

Dr. Axel C. Heitmann, Chairman of the Board of Management, Lanxess AG

David Lilley, Chairman, President and Chief Executive Officer, Cytec Industries

Peter Young served as the moderator for this discussion and posed questions relating to the strategic, financial, and structural changes in the chemical industry and the challenges/opportunities that they present to chemical executives. The following is one of the questions posed and the responses of the CEOs:

Question:

"You cannot pick up Chemical Week or any other magazine without reading some story about whether the U.S. and European Chemical industry will make it through this particular phase given the (1) shift of competition and growth to Asia and (2) the shift in feedstocks to the Middle East. All three of you you have major operations in both the U.S. and Europe. What is your view of this macro issue over the next 10 years? Do you share the same question mark about the viability of U.S. and European chemical companies?"

Answer:

"I do not subscribe to that theory. I think there is significant potential in Europe and the U.S. I think if businesses are managed properly and if we focus on the high-end value-added products, our businesses will continue to be viable. There was a lot of people who, 20 years ago, predicted that everything would eventually be made in Japan. Everything is not made in Japan today. So, I think we have great opportunities. We do have the basic fundamentals. A lot of people in this room have traveled around the world. You often find in some of these countries one recently built shiny airport or a nice shiny hotel. But then, if you go 200 miles out, 300 miles out, there is still a lot to be done in some of these places. We have the infrastructure in the U.S. and in Europe. But, more importantly, I think we have the fundamental political stability. You know, in some of these places you can get up one morning and find that you have a new government, a new system. I think there is significant political stability in Europe and the United States. One should take advantage of it. And we have a great workforce. We should motivate them rather than demoralize them." - *Seifi Ghasemi*

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“Seifi, I share your view about focusing on higher, value-added products. This is valid for both specialties and those sectors which are regarded as commodities. I would like to give you an example.....the tire industry. We are a major supplier to the tire industry. This rubber that we supply is regarded as a commodity product. However, I do not believe that. We have developed a new high performance rubber. With this high performance rubber one can build high-performance tires which are beneficial to the consumer. With these new high-performance tires you can save at least 10% of fuel consumption in cars. They are much safer, produce less noise, and are more environmentally friendly. So this is just one example of how much potential we have with our technology, our infrastructure, our trained workforces to focus on innovation, technology, flexibility to make our life more sustainable, more valuable. So I believe there is a great future in both Europe and the U.S. for the chemical industry. As long as we focus on these segments and step out of the low value, general purpose products.” – *Dr. Axel Heitmann*

“I think also we have to change our mindset. We have focus on being global companies, even if we are headquartered in New Jersey. The only way we can be cost-effective in R&D is to pursue our products on a global basis. And to be successful as a specialty company, technology must be the key. I think also that we have to make sure that our people think globally, that they have the experiences so they can deal with the different cultures as Seifi so articulately put it in his presentation. So we must have global missions for our businesses, but we must be respectful of local conditions. And sometimes, you know, we as an industry do not do that very well. So, I think technology and global awareness are prerequisites for success for a global company..” – *David Lilley*

“David, this has a lot to do with being open for change and to talk to our people about that. As long as we stick to the old system and do not involve our people, do not tell them that we need to change to create a better perspective, then we cannot win. So we have to be very open, and we have to go for the opportunities, and we have to deal with the old issues.” – *Dr. Axel Heitmann*

“By the way, I recall maybe it was the 70s and 80s where everyone felt that the U.S. was doomed and that all their ability to competitive making electronics and and other things would be gone; that they were going to be out of business. And yet, the U.S. revived itself using capital and technology and dramatically changed its ability to create higher value-added products. So, it’s not impossible to reinvent yourself.” – *Peter Young*

Building a Presence in China

Sunil Kumar, President and Chief Executive Officer, International Specialty Products Inc.

The impact of the growth of chemical manufacturing in China can be captured by industry statistics and forecasts of global chemical shipments by region.

In 2005, global chemical shipments totaled \$2.5 trillion with the following regional breakdown: Western Europe, 31%; United States, 21%; Japan, 11%; China, 9%; Other Asia/Pacific, 9%; ROW, 19%. China chemical shipments totaled approximately \$225 billion. In China, basic chemicals dominate the industry at 63.1% followed by Pharmaceuticals at 18.4%, Specialties at 13.6%, Agricultural at 3.9%, and other Products at 1.0%. The chemical industry growth rate in China is expected to be 11%, far outpacing that of other regions. In 2014, global chemical shipments are expected to reach \$3.5 trillion with the following regional breakdown: Western Europe, 26%; United States, 19%, Other Asia/Pacific, 15%, China 12%, Japan 8%, and ROW, 20%.



However, this does not tell the entire story since the exports of chemicals from China is not the key factor. It is China’s production of end-use products that are shipped abroad. Some of the chemicals required to make these products are produced in China and others are imported. If you are a supplier to an industry that is losing share to Chinese companies

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or who is shifting production to China, you face a decision to move production to China or to find a way to continue to compete as a supplier outside of China.

International Specialty Products (ISP) operates through four segments: Specialty Chemicals (53%), Industrial Chemicals (21%), Mineral Products (11%), and Elastomers (15%). In 2005, the ISP's Personal Care sub-segment accounted for 22% of the Specialty Chemicals revenues. Total sales in Asia totaled approximately \$190 million with China contributing close to \$50 million. Currently, ISP's approach in China consists of having full-service technical centers, five sales offices staffed by technical experts, extensive use of University-based consultants, toll manufacturing, and alliance with local Chinese science. To establish a strong presence in China, the Company further plans to: (a) issue a technical license to Markor for the B1D technology; (b) add finishing/blending facility for select Biocides, food ingredients, animal feeds and pharmaceuticals, and (c) acquire a manufacturing business.

Current Chemical Strategic, M&A and Financial Trends

Peter Young, President, Young & Partners

M&A activity for the first three quarters was active and at a faster pace in terms of annualized dollar volume and number of deals compared to 2005. In the first three quarters, \$33.2 billion of deals were completed versus \$33 billion for all of 2005. Number of completed deals greater than \$25 million in value reached 57 for the first three quarters which, on an annualized basis, is moderately higher than the 72 deals completed in 2005. The surge in world-wide dollar volume was driven heavily by the \$16.4 billion acquisition of BOC by Linde that closed in the third quarter. The hostile takeover of Engelhard by BASF and the unfriendly takeover of BOC by Linde clearly indicate that industrial buyers are willing to be aggressive. Four deals were above \$1 billion in value, with \$1 billion deals increasing to 72% of all dollar deal volume and 7% of the number of deals completed.



Valuations in the first three quarters went down in basic chemicals with EBITDA multiples for basic chemical transactions averaging 7.2x versus 8.2x in 2005. In specialty chemical transactions average EBITDA multiples increased to an average of 10.7x in the first three quarters versus 9.6x in 2005. After the surge in Basic chemical deals in 2005 to 59% of all deals with a heavy concentration in Europe, Young & Partners predicted a reversal in 2006 which has happened as predicted. In the first three quarters of 2006 Basic chemical deals plunged to 20 deals or 35% of the total number of M&A deals.

Europe targets were 42% total deal volume, ROW/Asia targets were 30%, with U.S. targets languishing at 28%. European restructuring continues to fuel Europe's lead in M&A. Financial buyers are losing significant market share of deals completed. Through the first three quarters, 19% of the number of deals were done by financial buyers, down from 28% for all of 2005. Their share of dollar volume also fell to 9% from 36% for all of 2005. More aggressive industrial buyers and higher interest rates contributed to the loss of share by financial buyers.

Debt financings have historically been driven by M&A related borrowings and refinancings. Given the fairly healthy volume of M&A activity over the last number of years, debt financings have been reasonably strong. Non-bank debt financing globally in chemicals was \$13.6 billion in the first three quarters of 2006, well ahead of the \$11.8 billion for all of last year. A large part of this volume was the refinancing of senior bank debt by Ineos related to the late 2005 purchase of Innovene from BP.

Global chemical equity issuance in dollars has historically been modest each year due to low chemical company valuations and the limited equity finance needs of chemical companies until recently. Volume in the first three quarters of 2006 has also been strong with 10 offerings totaling \$4.6 billion of issuance. Asia (\$1.0 billion) and Rest of World (\$1.2 billion) have had a major role in the equity issuance market. Five of those offerings were IPOs (Koppers, Wacker Chemie, China BlueChemical, Dyno Nobel and Reliance Petroleum) for a total of \$3.5 billion issued. This compares to 7 IPOs for \$4.0 billion of proceeds for all of 2005. IPO activity is also shifting away from the US due to Sarbanes-Oxley and the shift in chemical company growth to Asia and the Middle East.

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The Case for Private Equity in the Chemical Industry

Chinh Chu, Senior Managing Director, The Blackstone Group

Globally, Blackstone is the largest private equity firm. In its most recent fund, Blackstone raised \$15.6 billion equity capital that will enable it, on a leverage basis, to do deals in excess of \$75 billion over the next few of years. Blackstone's portfolio consists of 48 companies with aggregate revenues in excess of \$72 billion and EBITDA of over \$12 billion. In looking at the portfolio overall, Blackstone has sales in the Fortune 20, effectively. Private equity firms such as Blackstone are now major players and often they are the strategic players in a lot of acquisitions. They are perceived by a lot of industry sectors, including chemicals, as a major force.



Blackstone was started in 1985 and has evolved significantly since then. Its first fund was \$800 million. The last fund was an \$8 billion fund where Blackstone generated annual returns in excess of 80% per annum. Although Blackstone may be considered by some to be a typical, large private equity firm, it has some unique characteristics. Firstly, Blackstone has, since its inception, announced that it would never do a hostile deal. We will only do deals that the management team and board explicitly agree to. Secondly, Blackstone focuses on corporate partnerships. Over 50% of its deals are done jointly with other companies including the likes of GE and Time Warner. Blackstone also does deals jointly with repeat clients to acquire or invest in other companies or to divest assets. Thirdly, and more importantly, Blackstone has the right philosophy. The company is sufficiently flexible and has the right expertise to structure deals that are mutually beneficial to it and its partners.

Two prime examples of Blackstone's activities in the chemical sector involve its acquisitions of Celanese and Nalco. Nalco was acquired in 2003 and, at the time, was the largest financial buyer chemical deal at \$4.2 billion. Suez owned the company and wanted to dispose of its assets to pay down debt. Blackstone successfully competed against other major bidders. Under Suez, Nalco's growth rate was anemic at half that of GDP whereas Blackstone's historical analysis of Nalco, given its penetration and its focus on water treatment, was 2x to 3x GDP growth. Blackstone's management thought Nalco was a great franchise. Nalco was, essentially, an asset sale. Suez sold Blackstone the assets and took back the CEO, the CFO. As a result, Blackstone had to recruit a new management team. Blackstone then implemented a strategic plan of re-investing significantly in the sales force and the technology which took Nalco's growth rate to the high single digits from where it had been at 3% to 4%. Today, the \$1 billion investment of Blackstone and its partners is worth \$4.2 billion.

Celanese was a \$3.8 billion deal. Blackstone initially approached Celanese AG with a strategic partner with the intent to split up Celanese between the two parties. There were a lot of complex issues that had to be dealt with in order to execute this deal, including price fixing allegations against Celanese. After a month long due diligence effort was conducted, Blackstone's partner decided not to pursue this opportunity and left Blackstone somewhat at the altar with the board of Celanese. Blackstone was not allowed to proceed because it did not have a partner. Blackstone came back, however, and proposed that they acquire the whole company in a buyout. Blackstone got a second chance and after a year and a half of actual negotiations with the management team, the board of directors, the workers' union, the government, and the Kuwaitis (major shareholders), the acquisition was completed. So, this was an extremely complex deal from a structuring standpoint and an extremely risky deal from an execution standpoint. When Blackstone completed the acquisition, Celanese had EBITDA of \$770 million. Today, Celanese is projected to have \$1.2 billion of EBITDA. The company's total enterprise value has doubled in the meanwhile. Blackstone's equity, which was \$800 million in the deal, is worth 5x that today, over \$4 billion.

Although both the Nalco and the Celanese deals were successful, they took a lot of hard work, reinvesting, restructuring, reengineering, discipline and sound judgment to achieve this outcome.

In general, private equity firms have a bifurcated view of the chemical industry. There is only a handful of private equity firms, Blackstone among them, that will play in the chemical sector. Some private equity firms have a really negative view of the chemical business. It is a very tough business to leverage due to its very volatile cycles. Unlike a

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manufacturing business that grows at 2% or a service company that grows at 4%, a chemical company is less predictable. The cycles are significant enough that if a private equity firm invests at the wrong time it can lose all its money. In this instance, the use of leverage exacerbates the problem. Private equity firms are also concerned about the low free cash flow, in general, of the chemical sector relative to pharmaceuticals and other sectors with high cash flow. They are also very nervous about the ROE and ROA of the chemical industry and how that affects their model. Remember, private equity firms use a very leveraged model with a 4-5 year time frame; and when you build this all in with the cycles, the low free cash flow, and the high leverage, it is often very difficult to make the numbers work.

On the other hand Blackstone and a number of its counterparts like the chemical sector because it is a sector where they can really implement change. For Blackstone, change most often is the management business plan, not Blackstone's. What Blackstone generally does is to support management and help accelerate change by providing more capital and providing Blackstone's resources. Blackstone does not run the business and never tries to do that, but we think we can make a big difference. Additionally, Blackstone views the cycle as a two-edge sword; if it is timed right, one can have both the benefits of profitability and of valuation multiples accreting. There are very few industries in which timing is so absolutely crucial. Blackstone also believes that, overall, management teams of the chemical sector are not well compensated relative to how tough the industry is. Frequently, Blackstone is able to partner with management teams and offer a compensation package that is significantly better relative to other industries and certainly significantly better than the public setting. So, oftentimes private equity is about sharing the rewards and aligning incentives.

The three key private equity themes for chemicals are: (1) transformational changes, (2) cyclical cycle plays – purchase an asset, time it perfectly, and try to sell it close to the peak of the market, and (3) roll-up strategies as successfully employed by Apollo. The mega deal is another trend that will come. It will enable private equity firms like Blackstone to continue to expand the universe for partnerships in private equity, expand the types of companies that they can do work with, and expand the types of partnerships they can have with world class CEOs. When Blackstone acquired Celanese and Nalco, they were considered very large deals. At the time, Blackstone was nervous about taking on all the equity risk. So, they invited two strategic partners to diversify the risk. Today, Blackstone can write to up to a \$2.5 billion equity check for a chemical company which would translate into a \$10 billion deal that any of the top five private equity firms can do independently. To compound this that private equity firms are now doing deals jointly (eg. Blackstone and KKR). So incrementally one can see deals in the \$10 - \$30 billion range, and this is a new trend in private equity. Nine out of the ten largest deals ever done in private equity were done over the last 18 months. This same trend will apply to the chemical sector in the next five years. Increasingly, CEOs are more receptive to private equity, the deal sizes are larger, and the debt markets are more robust. It used to be that you could finance a chemical deal at a 5x debt to EBITDA ratio. Today the ratio is 7x debt to EBITDA. The debt market is awash with liquidity.

Today, private equity firms are concerned most sectors are either at or very close to the top of their cycles. Consequently, the deals that are done today in private equity are much more moderated. As one of Peter Young's chart shows, private equity in 2003 and 2004 dominated the market for chemical deals at 49%, today that percentage is down to about 20%. This is due primarily to strategics going back in and private equity being a little bit more concerned about the phase of the cycle. However, private equity momentum in the chemical sector will persist given the success of private equity deals in the sector. Private equity in general have generated returns of 27% in the last three years for top quartile companies, about 15% for overall private equity, and in chemical deals in excess of 50%. So there has been a lot of success stories and a lot of deals done. So, there will continue to be a lot of momentum in the sector.

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Chemical Industry IPOs: Is the Window Closing?

John E. Roberts, Senior Vice President, Buckingham Research Group

If one were to look at recent headlines, it would appear that the market for chemical IPOs is struggling. However, I believe the window for chemical IPOs has been pretty open. Successful and sizeable IPOs have been launched since 2003, not only in the U.S. but also globally. The IPO window can be likened to New England weather. The window opens and closes for varied reasons including price/valuation (window usually opens at some price), performance of prior IPOs, use of proceeds (cash-out, debt reduction, growth), "One-shot" vs. "seed" IPO (to be followed by secondaries), sector (fertilizers, petrochem, specialties, life sciences), cyclical (marginal price set by P/E or EV/EBITDA), seasonal (holidays). When one capital market window closes, another usually opens (debt, PIPE, strategic buyers, etc.).



Peter Young, President, Young & Partners

Global IPOs in 2005 reached a record dollar level since 1980. There were, however, many years and long stretches of time when no IPOs occurred. 2006 volume of IPOs through the first three quarters is close to the total for 2005. From 2004 to YTD 2006, 18 chemical IPOs were launched globally ranging in size from \$16 million to \$1,640 million.

Commodity chemical IPOs dominated the total dollar volume in 2005. Large Specialty chemical IPOs were a distant second. Specialty and Diversified chemical IPOs were more important ten to twenty years ago. Size has become more important and Commodity offerings generally happen in the upward moving period of the commodity chemical cycle.

There have been increasingly fewer small chemical IPOs. In fact, offerings greater than \$100 million now dominate the total dollar values. Further, offerings less than \$100 million dramatically lost their role in the IPO market in terms of their portion of the total number of offerings each year as well.

Although the IPO window is closing, especially for the Commodity chemical sector, we expect a smaller flow of non-U.S. chemical IPOs over the next few quarters.



The Bio Revolution in Chemicals

George S. Koutsaftes, Vice President, Young & Partners

The 21st Century holds a lot of promise for the use of biotechnology in the chemical industry. Biotech is expanding beyond medical applications to food and agricultural applications as well as industrial and environmental applications. Industrial biotechnology uses genetically engineered or enhanced bacteria, yeasts, fungi or animals and plants in chemical processes resulting in lower production costs, higher profits, less pollution and greater resource conservation.

The trend towards industrial biotech will continue to accelerate. Five percent of global chemical production already depends on biotech processes. According to McKenzie and Co., about 20% of the chemical market (worth \$280 billion) will involve biotech production by 2010. Fine chemicals present the strongest growth opportunity with biotech expected to affect 30% - 60% of the market within six years.



Many examples exist of applied industrial biotechnology. One prime example is the production of Vitamin B2, which has been transformed from a complex, multi-step chemical process to a simplified, one-step industrial biotech process.

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This has resulted in the reduction of production costs of up to 40%, reduction of environmental effects by 40% with CO₂ emissions, and less waste generation. Given the challenges faced by today's chemical industry, industrial biotech is providing new tools for innovation, process improvement, and cost reduction.

Paul J. Caswell, Co-Founder & Executive Vice President, Cathay Industrial Biotechnology

According to a consulting survey conducted in 2000, Biotech will represent approximately 30% of the chemical market by 2010, accounting for approximately 10 to 20% of raw materials and intermediates, 30% of specialty chemicals, 50% of polymers and 60% of fine chemicals.

There are many misconceptions about the role that biotechnology can or ultimately will play in the chemical industry. These fallacies, however, will not hinder progression to the extensive use of biotechnology in chemical processes as this will lead to greater efficiency, lower costs, and ultimately better products for both the consumer and the environment. One major misconception is that the U.S. is leading biotechnology development. Consider, however, the following facts: (1) Brazil's ethanol industry is more advanced than that of the U.S., (2) EU's biodiesel is larger than that of the U.S., and (3) China's biotechnologies for citric acid, lysine, xanthan gum and vitamin C lead the world.



Cathay Biotech is a Chinese company that is using new cutting-edge, biologically based technology to address some of the challenges faced by the chemical industry. Cathay management believes that China offers many advantages for industrial biotech including: low investment, established production infrastructure, reasonable costs of raw material and energy, low R&D costs, growing domestic market and less existing chemical investment. Cathay has one technology platform that produces multiple products for a variety of applications. One of its primary products is long chain diacids, which are bio-based chemical building blocks for polymer, with applications in the production of nylon, powder coating, flexible tubing, monofilament and perfume. In its relatively short history, the Company has established an impressive roster of clients including, Du Pont, Henkel, International Flavors & Fragrances, Akzo Nobel, Arkema, and Ciba.