India: Technology: IT Services

Equity Research

Second Annual IT Services Trip: LT drivers exist, 2012 outlook hazy

Second Annual Indian IT Services Trip: Offshore on secular trend

We hosted our Second annual Indian IT Trip from Sep 6th-9th and met Indian & MNC firms, Tech Research firms and industry bodies. In the backdrop of current global concerns, our trip provided us with a reasonably solid view of the secular growth trajectory for the global delivery model of Indian IT, growing recognition of quality as a reason to outsource vs. cost arbitrage alone, supply- side dynamics adequate to meet demand. However, the 2012 outlook remains hazy, as firms have not yet started budget discussions with clients and the impact remains uncertain.

Structural growth drivers for LT intact, though models are evolving

Growth drivers highlighted were opportunities for market share gain as well as expansion in the addressable market, driving a mid-teens growth for the industry over the next 3-5 years. Additionally, firms were optimistic on gaining traction with newer verticals which have not taken to offshoring like Healthcare, Public sector and are seeing greater willingness now. Europe was highlighted as another large opportunity, esp. for 2012, despite the negative headlines.

Technology evolution bringing in newer opportunities for IT Svcs

Larger firms were positive about newer growth areas of Cloud computing, Mobility and Analytics over the MT to LT. Managements spoke about their investments in tech platforms, kick-starting pilot projects and the potential to significantly increase non-linear revenues from these streams.

Infrastructure Mgmt Outsourcing – most sought after service area

While newer models are emerging, IMO surfaced as the most sought after area for most of the firms. IMO is being seen as a blend of defensive and high growth area, and the offshore potential in this space has been tapped the least. Today's note on HCL Tech: *IMO: A sustainable advantage; incremental US$1bn by FY14,* discusses this opportunity in greater detail.

HCL Technology & Infosys remain our top picks in Indian IT

We prefer HCL Tech (17%/21% revenue and EPS CAGR for FY11-FY14E) and Infosys (limited downside on valuations) as our top picks. Key upside risks for the sector are recovery in the developed markets, INR depreciation; downside risks are deteriorating outlook in the US/EU zone.

INDIA IT SERVICES – RECOMMENDATIONS

Company	Ticker	Rating	12-m TP (Rs)	Potential Up/Down	FY2013E P/E (x)	TP Impl. P/E (x)
HCL Tech.	HCLT.BO	Buy*	501.0	28%	11.3	14.4
Infosys	INFY.BO	Buy	3,004.0	23%	15.6	19.1
TCS	TCS.BO	Neutral	1,115.0	7%	17.8	19.1
Wipro	WIPR.BO	Neutral	390.0	12%	14.7	16.4
Mphasis	MBFL.BO	Neutral	401.0	20%	8.3	10.0
Rolta India	ROLT.BO	Neutral	115.0	22%	5.9	7.2
Patni	PTNI.BO	Sell	271.0	-8%	9.1	8.4

* On Regional Conviction LIst
For important disclosures, please go to http://www.gs.com/research/hedge.html.

Source: Datastream, Goldman Sachs Research estimates.

RELATED RESEARCH

HCL Technologies: *IMO: A sustainable advantage; incremental US$1bn by FY14; CL-Buy, Sep 29th 2011*

India IT Services: *Macro concerns may impact 2012 growth despite stable NT outlook, Sep 4th,2011*

India IT Services: *Analyzing risk/reward for large-cap IT in a hard landing scenario, Aug 12th, 2011*

India IT Services: *Assessing industry impact on the current debate over US visas, May 30th, 2011*

India IT Services: *2011: Revenue momentum accelerates; bias towards large-caps, Jan 12th, 2011*

India IT Services: *India trip confirms offshore's secular growth, but landscape is fluid, Dec 6th, 2010*

India IT Services: *Indian IT in no danger of being 'Dalianed': Views from over the wall, Sep 7th, 2010*

HCL Technologies: *RIM services on strong trajectory in FY10; raise TP by 16% to Rs341, Sep 9th, 2009*

Balaji V. Prasad
+91(22)6616-9179 balaji.prasad@gs.com Goldman Sachs India SPL

Rishi Jhunjhunwala
+91(22)6616-9039 rishi.jhunjhunwala@gs.com Goldman Sachs India SPL

Baneesh Banwait
+91(80)6637-8716 baneesh.banwait@gs.com Goldman Sachs India SPL

Table of Contents

We thank Julio C. Quinteros Jr., Mohammed Moawalla, SK Prasad, Borra and Vincent Lin, CFA for their contributions to this report.

Exhibit 1: Summary of our 12-month target prices and valuation metrics

	GS			Current	Target	Potential	Mkt Cap	FY2013E / CY2012E (X)							Implied P/E	FY11-14E CAGR	
	Rating	Ticker	Curr.	Price	Price	Up/Down	(US$mn)	EPS	P/E	EV/EBITDA	P/B	RoE	CROCI	PEG	at TP (x)	Sales	EPS
Infosys Ltd.	Buy	INFY.BO	INR	2,446.00	3,004.00	23%	$28,614	157.08	15.6	9.9	3.7	24%	46%	1.0	19.1	17%	16%
Versus coverage group									*5%*	*3%*	*5%*				*11%*		
HCL Technologies Ltd.	Buy*	HCLT.BO	INR	392.65	501.00	28%	$5,487	34.71	11.3	6.9	2.4	21%	21%	0.5	14.4	17%	21%
Versus coverage group									*-24%*	*-28%*	*-33%*				*-16%*		
Tata Consultancy Services Ltd.	Neutral	TCS.BO	INR	1,038.25	1,115.00	7%	$41,412	58.38	17.8	12.1	5.5	30%	45%	1.2	19.1	20%	14%
Versus coverage group									*20%*	*26%*	*55%*				*11%*		
Wipro Ltd.	Neutral	WIPR.BO	INR	348.45	390.00	12%	$17,427	23.74	14.7	9.5	2.6	18%	21%	1.5	16.4	15%	10%
Versus coverage group									*-1%*	*-1%*	*-27%*				*-5%*		
Large Cap Indian IT Services							**$92,940**		**14.8X**	**9.6X**	**3.6X**	**23%**	**33%**	**1.1**	**17.3X**	**17%**	**15%**
Patni Computer Systems	Sell	PTNI.BO	INR	295.50	271.00	-8%	$803	32.45	9.1	6.5	1.0	11%	15%	NM	8.4	7%	-8%
Versus coverage group									*17%*	*41%*	*1%*				*-2%*		
Mphasis	Neutral	MBFL.BO	INR	333.90	401.00	20%	$1,429	40.14	8.3	3.9	1.4	16%	23%	NM	10.0	7%	-8%
Versus coverage group									*7%*	*-16%*	*34%*				*17%*		
Rolta India Ltd.	Neutral	ROLT.BO	INR	94.35	115.00	22%	$310	15.98	5.9	3.4	0.7	11%	15%	NM	7.2	14%	-12%
Versus coverage group									*-24%*	*-25%*	*-34%*				*-15%*		
Mid-Cap Indian IT Services							**$2,542**		**7.8X**	**4.6X**	**1.0X**	**13%**	**18%**	**NM**	**8.5X**	**9%**	**-9%**
Cognizant Technology Solutions	Buy	CTSH	USD	66.52	70.00	5%	$20,719	3.34	19.9	11.6	3.6	19%	37%	1.0	20.9	24%	19%
Accenture Plc	Buy	ACN	USD	53.65	62.00	16%	$39,612	4.80	11.2	5.5	6.0	49%	79%	0.9	14.4	6%	12%
Computer Sciences Corp.	Sell	CSC	USD	27.87	26.00	-7%	$4,347	3.87	7.2	2.1	0.5	7%	9%	NM	6.7	-1%	-3%
ExlService Holdings, Inc.	Neutral	EXLS	USD	22.66	25.00	10%	$703	1.03	22.0	7.9	2.2	11%	34%	1.5	24.3	27%	15%
Genpact Ltd.	Neutral	G	USD	15.33	16.00	4%	$3,467	0.77	19.9	9.3	1.7	9%	16%	1.6	20.8	19%	13%
WNS (Holdings) Ltd.	Neutral	WNS	USD	11.75	11.00	-6%	$535	0.32	36.6	6.6	1.8	5%	13%	1.3	34.2	8%	27%
US IT Services (ex WNS)							**$69,384**		**16.1X**	**7.3X**	**2.8X**	**19%**	**35%**	**1.2X**	**17.4X**	**15%**	**11%**
AtoS	Neutral	ATOS.PA	EUR	33.26	42.00	26%	$3,727	3.80	8.7	3.7	1.1	14%	**13%**	0.6	11.0	20%	15%
Capgemini	Buy	CAPP.PA	EUR	26.40	36.00	36%	$5,613	2.61	10.1	4.6	0.9	10%	**14%**	0.8	13.8	6%	13%
Indra	Sell	IDR.MC	EUR	10.82	12.00	11%	$2,409	1.11	9.7	7.3	1.5	15%	**12%**	NM	10.8	2%	-5%
Logica	Neutral	LOG.L	GBP	0.80	1.00	25%	$2,009	7.84	10.2	5.2	0.6	9%	**9%**	NM	0.1	3%	-10%
Tieto	Sell	TIE1V.HE	EUR	9.69	8.00	-17%	$946	0.91	10.6	4.3	1.5	11%	**10%**	NM	8.8	2%	-1%
European IT Services							**$14,704**		**9.9X**	**5.0X**	**1.1X**	**12%**	**12%**	**0.7X**	**8.9X**	**7%**	**3%**
Japanese IT Services							**$17,077**		**13.3X**	**3.9X**	**1.1X**	**8%**		**1.7X**	**14.5X**	**4%**	**8%**

* On Regional Conviction List. For important disclosures, please go to http://www.gs.com/research/hedge.html. Note: For Indian companies, FY12 refer to fiscal year ending March 2012 and so on. Priced as of the close of September 28, 2011.

Source: Company data, Goldman Sachs Research estimates.

India IT Services Trip assures long term growth story is intact

We conducted our Second Annual India IT Services Investor Trip 2011 during the week of 6th September. We visited about 15 companies in Delhi, Mumbai, Chennai, and Bangalore meeting CXOs of major Indian IT players, MNCs, software firms, industry bodies and consulting agencies. Our trip provided us with increased confidence on the longer-term sustainability of the offshore industry for the next decade, provided the Indian companies continue to evolve and enhance/expand their prospects for global service delivery, as they have done in the past decade.

These are the key takeaways:-

1) Increased confidence on the long term IT outsourcing industry as Indian vendors focus on new initiatives to tap the next leg of growth.
2) Indian firms could face stiffer challenges and need to revisit business models as MNC peers increase their offshore base more aggressively than ever.
3) 2011 budget cycles remain intact and corporate are better prepared to tackle 2012.
4) Supply-1side dynamics show marginal signs of improvement though attrition remains high.
5) Shift to fresher hiring is the theme for FY12 as focus is to augment the bottom layer of the pyramid.
6) Volume growth to continue to drive revenues for the next 2-3 years.
7) De-risking by investments into new geographies could be a key to long term growth.
8) India may become a prominent addressable market in the next three years.
9) Momentum towards diversifying delivery to China has slowed down.
10) Pure-play BPO business model is becoming dependent on scale and capabilities.
11) Visa concerns are leading to a slow but structural shift to more onsite local hiring.
12) Mid-cap companies continue to struggle except where a niche is developed.
13) Reorganization of business structures has become important with dynamic business environments – verticalization dominates senior management focus.
14) Non-linear initiatives gain momentum and real impact on fundamentals could be felt in 2-3 years from now.
15) Infrastructure management surfaced as the most sought after service area – blend of growth and defensive attributes

Summing it up, we reiterate our views in three timeframes :

1) **Near term** – Demand backdrop remains steady and the corporates continue to hire to ramp up for the pipeline. 2011 budgets remain intact with almost no companies citing any pressures from their customers.
2) **Medium term** – Going into 2012, macro uncertainties in US/EU could impact the dollar value of IT budgets as customers start their budgeting process over the next three months. Much could be decided by fall of this year as to what shape 2012 can take but a mid-teens growth looks the most likely scenario with the current visibility.
3) **Long term** – Low- to mid-teens growth over the next ten years doesn't look challenging through market share gains, offshore shift, steady innovations adapting to newer technology trends (cloud, mobility, platforms), and constrained IT labor supply.

Key industry takeaways confirm stable 2011 but uncertain 2012

Long term IT outsourcing story is intact as Indian vendors focus on new initiatives to tap the next leg of growth

Our discussions with the CXO's of all the major firms in the Indian IT services space resulted in the conclusion that the long term IT outsourcing story is still intact with market share gain as well as expansion in the addressable market providing sufficient opportunity to grow in the next 3-5 years. Other key takeaways are:-

- Outsourcing is not a point of contention for the CIO's anymore during the customer discussions. Hence, it is given that companies will outsource, however, market share gains and outcome based pricing are coming up as the main area of discussion.
- Public sector across the geographies have been showing greater willingness to accept offshoring as long as data confidentiality is maintained.
- Offshore cost arbitrage could remain over the longer term, but outsourcing customers at Indian vendors are no longer looking for cost but for flexibility in their offerings.
- As per one of the advisory firms, of the global 200 companies, only 700-800 companies are catering to mainstream offshoring. Another 300-400 have done it on an ad-hoc basis. The rest of the 800 companies are likely the next market opportunity for the Indian vendors. At present, only about 10% of the IT services market is offshored.

Offshore competition likely to intensify as MNC vendors shift to offshore more aggressively

Most of the MNC vendors stated that they are resorting to increased offshoring and are looking to aggressively increase their presence in India. One top European vendor even said that they are not facing any internal or external pressures against shifting towards offshoring. Hence, an increased intent from the MNCs could heat up the supply- side dynamics in the country and may lead to sustained levels of attrition and wage hikes. It may also lead to stiffer competition to the Indian vendors in their arena of application development and maintenance as the bigger MNC vendors are able to offer competitive pricing through offshoring. Some companies have already started seeing IBM and ACN as their lead competitors in some of the large ADM deals.

2011 budget cycles remain intact and corporates are better prepared to tackle 2012

- Most customers have not yet reduced their IT budgets. In order to cut the overall IT budgets without impacting efficiency of the business models, companies may move towards offshoring. Some corporates have already started to ask for higher offshore mix for fresh engagements.
- Managements felt their clients are better prepared to handle a slowdown in growth and demand as compared to 2008. The difference this time around is that 2008 came as a sudden crisis for which neither IT vendors nor their clients were prepared. However, companies are aware of the risks of not investing in to business to prepare when demand returns back as was accepted by INFY and Wipro.

Supply-side dynamics show little signs of improvement; attrition remains high

A surprise observation was that the supply-side dynamics are still skewed in favor of the employees with not much change in the attrition levels in the lest three months. One reason attributed to this may be that the wage hikes and promotions for most of the companies have been given the last 3-6 months and this is the peak season for attrition. However, the deteriorating economic outlook has not transpired into the supply-side dynamics as yet. We believe that the aggressive hiring plans of the top companies may keep the supply-side pressures in the near term, unless we see cuts in the hiring plans.

Shift to fresher hiring is the theme for FY12 as to flatten the pyramid

Last year (2010) was the year of lateral hiring where greater proportion of laterals vs freshers were hired as the demand resumed in a strong way and companies had to resort to immediate hiring. It resulted in inflating the wages for the laterals and thereby increasing the overall costs for the companies, as companies scouted for right capabilities. We believe that 2011 is a different year as demand moderates and cost pressures rise. Most companies reiterated their strategy of a high proportion of freshers to flatten the bottom of the pyramid. One implication of that would be most of the growth would be in the form of volume growth as higher number of freshers are hired. Managements are also planning to visit campuses for next year's offers. The season starts from 4QCY11 and companies have not taken any slices in offering freshers.

Volume growth to continue to drive revenues for the next 2-3 years

For the Indian IT services industry, the biggest concern is the sustainability of the link between revenues and volumes. At some time, the Indian IT companies would become too big to manage and the linearity model needs to be broken. However, most of the companies reiterated that over the next two-three years, volume growth could be the key driver for revenue growth. Despite concerns on the demand outlook for 2012, comments from two managements of the top 5 companies stood out. Whereas one company said that they do not see any impediment for a 20%+ growth over the next three years, another company management mentioned that they will continue to grow more than others, in a response to that.

De-risking by investing into new geographies will be a key to long term growth

We came back from the trip with the impression that the importance of the US market could be receding as a growth market for the Indian IT companies, though it will remain the largest market in terms of revenue share. We may see a slow period of growth in the EU market. Most of the Indian companies see the economic crisis in the EU region positively and as an opportunity to gain market share. First time outsourcers are outsourcing more and we are seeing increasing traction. Nordics, France, Germany are at tipping point of opening up for outsourcing. Most European companies are not open to offshoring as yet and hence EU may become an attractive addressable market for the Indian companies.

Infrastructure management surfaced as the most sought after service area – a blend of growth and defensive attributes

Infrastructure management emerged as the service area with the highest growth in the last three years. Infra management has a blend of defensive as well as high growth attributes and the characteristics are : (1) It is a high growth space now with corporates looking for high value propositions, (2) It is a low margin business though with around 14% operating margins after squeezing out the India offshore advantage, (3) It has revenues in the nature of annuity and with a much smoother sequential growth which provides stability to the earnings for the growth. We believe that HCL Tech is one of the leaders in this space and is in a sweet spot with its differentiated value proposition. (For details, refer to our report dated Sep 29, 2011, *IMO: a sustainable advantage; incremental US$1bn by FY14).*

India may become a prominent addressable market in the future

India, as an addressable market, is becoming more prominent in the last couple of years. TCS and IBM have been the first movers (along with Wipro) to tap the Indian market through various IMS deals, especially in the public sector. India IT revenues is currently far less penetrated than other major economies. Large IT deals like UID implementation, SAP implementation in PSU banks and Indian Postal departments are landmark deals which showcase India's potential as an end market.

Momentum towards diversifying delivery to China has slowed down

Over the past few years, China has emerged as one of the largest threats and opportunities for the Indian dominance. In our report dated Sep 6, 2010*, Indian IT in no danger of being 'Dalianed': Views from over the wall*, we assessed China as a long-term opportunity from the delivery as well as client opportunity side. In our recent meetings, we witnessed a change in the momentum towards diversifying delivery to China. Despite every company accepting that they continue to expand operations in China, except Infosys, most companies reiterated that it will take 3-5 years before scale can be achieved in China and it becomes prominent on the global map. We were surprised to hear that showcase IT cities like Dalian are already becoming expensive and supply side balance is becoming unfavorable. Hence, despite government support on infrastructure and tax incentives, wage hikes and lack of availability of talent may lead to a slower move to China.

Pure-play BPO business model is becoming dependent on scale and capabilities

As the corporates move towards doing more total outsourcing deals and as the bigger IT vendors expand their service offerings by including BPO capabilities as well, it will become more and more difficult for the pure-play BPO companies to justify their business case and survive at a respectable profitability. Our discussions concluded that only scale and capabilities will allow the pure-play vendors to co-exist in the BPO space and the likes of Genpact and EXL Services are benefitting from the same.

Visa concerns have led to a slow but structural shift to more onsite local hiring

Issues and concerns raised over visa applications has clearly resulted in two things :

(1) visa approval time has increased on an average by 50% with more rejections than witnessed in the past. It signals that the visa application process has become more stringent on the back of scrutiny on the entire process. Some countries have also started taking salary as a benchmark to decide the capabilities and the applicable visa for the employees.

(2) Most of the managements stated that they have increased local onsite hiring in the last six months. Though they are not facing problems in getting H-1B visas, it's the L-1/L-2 visas which have become difficult. The fact that cost differential between an H-1B employee and a local employee is not significant has also led to this structural shift. As we had assessed in the note dated. May 30, 2011,*"Assessing industry impact on the current debate over US visas*", though the shift to increased hiring looks imminent, it should not structurally remove the margin advantage of the Indian companies and could impact it by 50-100 bp in the long term.

Mid-cap companies could continue to struggle except where a niche is developed

With the large companies becoming larger and the smaller companies not having a real differentiated product, It is becoming difficult for customers to go to Tier- II companies now and they will do so mostly for more flexibility in contracts or for very specialized services. Hence, we believe that mid-size companies could struggle to attain greater scale unless they offer niche capabilities which are not offered by the larger players, who can work with their scale strength and higher profitability to get deals. Higher margins for Tier 1 companies are more related to the economies of scale, quality of fresher hiring, and intellectual capital.

Reorganization of business structures has become important with dynamic business environments – verticalization is the key mantra

As the Indian companies became bigger, it has become an organizational challenge to handle different verticals, service areas and geographies. Hence, over the last three years, companies have to resort to some reorganization to remain important. As a common theme, verticalization has been adopted by various companies. Cognizant was the first one to restructure themselves into verticals. Most of the other top tier companies have migrated towards the same model now with Infosys being the latest participant.

Non-linear initiatives gain momentum but real impact still looks 2-3 years away

Larger firms were positive about newer growth areas of Cloud computing, Mobility and Analytics over the MT to LT. Managements spoke about their investments into developing solutions, kick-starting pilot projects and the potential to significantly increase non-linear revenues from these streams. Cloud, mobility and platforms remain the most important long term growth driver.

Company specific takeaways

NASSCOM (Mr. Som Mittal, President)

1) **Industry would grow at mid-teens over the medium term** – Indian IT sector should be able to grow at mid-teens levels over the medium term and may extend the same growth till 2020 as they continue to grow up the value chain of outsourcing.

2) **Supply side shortage is not a concern** – India should not have a supply side shortage in the near to medium term, especially at the entry level. India is producing enough engineering as well as non-engineering graduates to cater to the mid-teens growth in the medium term. Only areas where it can face a shortage for sporadic periods of time is for domain specialists.

3) **Visa issue could get resolved soon –** They are confident that the visa issue that has arisen over the past few months could get resolved. NASSCOM has been working with the US over the visa issue in the recent past. However, they did mention that the visa issuing process has become more stringent and companies may start looking to increase local hires too, despite a shortage of local talent in these regions.

4) **China is becoming expensive, Dalian is the best example –** China as an outsourcing destination is becoming expensive as the cost arbitrage is reducing due to high inflation in China. Dalian, which is a showcase IT city in China, is already facing supply side issues. Hence, over and above the concerns regarding IP, security, language barriers etc, inflation is unbalancing the dynamics in China.

5) **Margin expectations should be reset** – NASSCOM president articulated that the Indian IT companies may have to reset their margin expectations in order to stay competitive and relevant over the long term. Hence, margin trajectory for some of the large vendors may structurally come down over a longer term.

Infosys (INFY.BO / INFY, Buy)

1) **Infosys 3.0 strategy on track** – Infosys management articulated the Infosys 3.0 strategy of addressing trends like cloud computing, mobility and future sustainability with an objective of getting closer to the clients, increase revenue per employee and achieve non linear growth.

2) **Budgets won’t change this year, optimistic on LT** – Management stated that they don't see budgets for 2011 getting impacted due to deteriorating macro conditions. Despite low visibility on 2012, they remain confident of the long-term growth drivers for the industry. Further, they added that they would not chase deals by being a low price leader.

3) **INFY still getting premium pricing, no intention to cut prices** – Management reiterated that they continue to get premium pricing and it is stable currently. However, deals over US$5mn are becoming very competitive on pricing. Lower margins should not result in increased shareholder returns and the company doesn't need to cut margins as they continue to grow, in our view.

4) **FY2012 revenue guidance remains intact** – Management remained comfortable about achieving the USD revenue guidance of 18%-20% for FY2012. Management also stated that despite macro concerns and low visibility on 2012, they do not see reasons to revise it at this point of time.

Tata Consultancy Services (TCS.BO, Neutral)

1) **Growth outlook remains positive, 2011 budgets intact** – TCS management reassured that the demand outlook remains robust and they do not see significant risks to a 20% growth in the near term. Recent customer surveys done by the company also suggested that the client spending is intact. Pricing remains stable with uptick in the last two quarters due to COLA increases.

2) **Hiring plans on track –** Hiring plans for the year are on track with no change in the hiring guidance. More so, they are in the process of visiting campuses for next year's fresher hiring. Management stated that once they make the offers, they will not withdraw this if the outlook worsens, but could stagger the intake.

3) Regulatory work to mitigate any slowdown in BFS vertical – Any meaningful slowdown in the BFSI segment could be mitigated to a certain extent by the presumptive spending on regulatory work. Corporates have already started spending on compliance work related to Dodd Frank Act which will be come into implementation in 2012.

4) **Cloud, mobility and analytics are the next drivers** – TCS stated that the technologies in the areas of cloud, mobility and analytics are going to be the next growth drivers and the TCS is strategizing to tap this opportunity. Initiatives like ION, platform BPO division and the product division are the new initiatives where the company is investing.

Wipro (WIPR.BO / WIT, Neutral)

1) **Move to verticalization model progressing well, hope to see recovery in 2-3 quarters –** As part of the restructuring, company has moved away from the geography based organizational structure to vertical based P&L model. Management expects to return to the industry level growth in the next two quarters.

2) **Business environment not deteriorating as yet** – they are not seeing any major impact of the macro concerns on the client budgets currently. At worst, projects may be delayed due to slower decision making, but no clients are shelving the projects.

3) **Technology trends like cloud, non linear investments** – On cloud, company continues to invest but will not go through the capex route by providing piece meal data centers like Google. Instead, they are looking to offer end to end infra services. On non linear initiatives, they are looking for a combination of M&A and organic investments into manpower and software licenses to achieve growth.

4) **SAIC integration on track** – SAIC provides upstream selling advantage and 150 consultants in the energy and utility space. Acquisition provides synergies in winning deals in Europe through joint marketing as well as opportunity to get more projects from existing customers.

HCL Technologies (HCLT.BO, Buy, On Conviction List)

1) **First time outsourcers are increasing outsourcing –** HCL is witnessing increasing traction among the first time outsourcers as they are willing to increase outsourcing, especially in the European region, which is relatively less exposed to outsourcing.
2) **Total IT outsourcing deals are defensive and growing** – This space is a growing space now and has a smoothened revenue profile as it is mostly annuity revenues. HCL can easily squeeze 14% operating margins on these types of deals after leveraging the India cost advantage.
3) **Deal wins by Xerox (from HP) and Nokia (from IBM) could put HCL in the growth phase** – Landmark deal wins like Xerox and Nokia over the past few years have propelled HCL in to the leading IT companies in this space. Deal pipeline is much bigger now than ever before and 4QCY11 could be a very important quarter for vendors.
4) **EBIT margins should stay at current levels** – Management reiterated its guidance of maintaining EBIT margins at 14% in 2011 levels and reinvesting any incremental profits back into the business to enhance its capabilities, strengthen client partners and chase total outsourcing deals.

Mphasis (MBFL.BO, Neutral)

1) **HP remains a drag on the overall business –** Business from the HP channel may remain a drag over the next one year with very limited growth. The company suggested that they would have been able to grow at the industry rate if the HP channel did not face ramp downs.
2) **HP services business outlook is still modest** – Management stated that the HP services side of the business is still modest and they expect a single digit revenue growth from this business in the current year.
3) **Continue to search for acquisitions** – They continue to explore for acquisition opportunities in different geographies and service areas, e.g., product related targets in BFSI and service related targets in emerging markets.

Cognizant Technologies (CTSH, Buy, covered by Julio C. Quinteros Jr.)

1) **2011 trends remain firm, 2012 growth expectations remain in question -** Management reiterated their confidence in achieving 32% revenue growth guidance for 2011; our model currently forecasts total revenue growth of 34% yoy. Consistent with our 8/15 industry report "*Peering through the summer fog, shifting to 2012 valuation with a more defensive stance"*, we remain guarded on growth expectations into 2012 with our model currently suggesting some moderation in revenue growth to about 20% yoy.
2) **Consistent with expectations, Europe remains on track; Financial Services continues to grow, but remains biggest source of investor concern –** Consistent with our expectations, Europe (18.7% of revenues) appears to have regained its footing into 2H2011 as the company appears to have effectively offset some recent contract drags (e.g., completion of post-M&A integration work, etc.). Investors remain focused on CTSH's large financial services exposure, which at 41% remains among the highest in our coverage group. However, based on company commentary most projects in the financial vertical remain on track for 2011; given the upcoming capex and budgeting cycle important for the pace of spending into 2012 especially for the more discretionary application development revenues (50% of revenues).

3) **Leading indications from headcount plans suggest sustained hiring –** Consistent with our supply driven model, we view headcount additions as a key leading indicator and on this front it appears that CTSH remains firm in its current recruitment plans with a focus on campus recruiting (Day 0 slots at most campus locations). Looking ahead, the company has shifted its focus to its 2012 campus hiring efforts.

Genpact (G, Neutral, covered by Vincent Lin, CFA)

1) **Consistent with expectations, margins should improve modestly over time –** Margins on gain-share model (i.e., productivity improvements) are typically higher than FTE model; however, most RFPs still prefer the FTE model. As the revenue mix from gain-share model (which we estimate at 10%-15% of revenues) increases over time, we believe margins should structurally improve, offset by continued wage inflation and ongoing investments.

2) **Headstrong acquisition is a strategic fit and early integration appears on track –** Management estimated that cost synergies should total $1-$2 mn in year 1 and $4 mn in year 2. Revenue synergies are expected to total $25 mn. EXLS go to market efforts are centered on a common sales team driving cross selling opportunities.

3) **De-risking GE, CPG is the growth engine –** With a growth rate of 2%-3% per year the contribution from GE (30% of revenue) is expected to continue declining as the rest of the company is expected to sustain a growth pace of 20% yoy growth. Among verticals, CPG growth momentum is robust; G recently added Walgreens as a major client and is currently pursuing similar deals in the pipeline.

ExlServices Holdings (EXLS, Neutral, covered by Vincent Lin, CFA)

1) **2011 expectations remain unchanged and relatively insulated from current macro trends –** Management reiterated its confidence in this year's guidance and specified that macro concerns should not weigh on results in the near-term. Recent EXLS discussions with clients continue to center on additional work rather than a pullback.

2) **Labor dynamics including key attrition and hiring metrics still favorable –** The company indicated that supply of resources is healthy, especially for the 0-2 year band. Our model currently assumes total headcount additions of 5,187 for 2011 (including 3,700 employees from the recent OPI acquisition) with total headcount expected to finish at 17,873 (+41% yoy). The relatively higher attrition in campus recruits helps in rationalizing costs, as new employees incur a lower base and therefore provide benefits of the pyramid. For perspective, current attrition is running at 33% as of the June-qtr, which is already down from a recent peak of 36% in the December-qtr.

3) **Incremental growth expected to come from new verticals –** Over the long-term, EXLS sees significant scope for additional growth beyond the five verticals that they are operating in currently. The company is targeting to achieve $1 bn in revenue beyond which growth could slow from existing verticals given higher penetration and more competition. Current revenue is currently dominated by Insurance at 51%, Utilities at 17%, and Travel at 8% of revenues.

Capgemini (CAPP.PA, Buy, covered by SK Prasad Borra)

1) **India as an end market** – India is one of the focus growth markets along with Brazil and China but is still a small geography in terms of direct end market revenue contribution. SAP implementation is a big growth area for Capgemini especially in the verticals of Energy, Tax and Defense. Success in India is dependent on getting the right talent and the right cost structure.

2) **Importance of India operations in the global scene** – India is a part of almost every single deal the company bids globally. Growth, margin and efficiencies by getting the pyramid structure right are the key performance indicators for the management team in India.

3) **Offshoring to grow** – Company mandate is to grow headcount aggressively in India with a goal to achieve about half of the global headcount in India in the next three years. Pricing is not a big advantage because of parent's margin structure as they don't package a 100% offshore deal.

4) **Pyramid in India is not similar as yet** – Capgemini still hires only 30% freshers in India as compared to about 60% of other Indian vendors. Hence, there is a lot of headroom to benefit from the pyramid structure. Fresher salaries are inline with the Indian peers but get advantage of an MNC brand. Bench strength is close to 20% vs. 30% for Indian peers.

5) **Recruitment patterns** – Company gets day 1 or day 2 slots which are similar to Accenture, in their view. Senior talent in not a problem currently as the market is flush with that in India.

Atos Origin (ATOS.PA, Neutral, covered by SK Prasad, Borra)

1) **Difficult for Indian companies to acquire in Europe** – Business model for Indian companies is to have cost advantages in India. If they go for acquisitions in Europe, restructuring costs are much higher (more than even US) which doesn't make the acquisition viable from the cost point of view.

2) **Offshore receptiveness still not good** – Europe is a heterogeneous geography and the receptiveness to offshoring is still not as good as US. Hiring in EU is a challenge with language barriers in some countries.

3) **Plans to cross the 11,000 mark in India –** Company is targeting to cross headcount of 11,000 people in India in 18 months. They are looking for 70% offshoring in the application management and infra management of the global portfolio.

4) **No cuts in discretionary spends** – Company is not seeing any significant cuts in the discretionary spending as the budgeting process for the next year has not started yet.

SAP (SAPG.DE, Buy, On Conv. List, covered by Mohammed Moawalla)

1) **New growth drivers –** Management cited the following new big growth drivers going forward (1) HANA, (2) mobility through Sybase acquisition and (3) SMEs

2) **BRICs/Emerging markets a key growth theme –** India could play a larger role in SAP's overall revenues in future along with China. It will be primarily driven by large user base; hitherto revenues driven by ERP from larger organizations. Latest business practices could occur in India with new initiatives such as (1) Multi Resource Scheduling - aimed at improving scheduling resources, which can be used by an INFY, TCS to better manage their benches. (2) eExit - aimed at making exit processes faster.

3) **Competitive landscape with Indian vendors** – The differentiator for SAP is the integrated solutions which is a key selling point for large deals with big Indian customers. The SME market is however difficult market to win and is very competitive.

4) **India employee strength and outlook** - India headcount has remained flat at about 4,000+ permanent employees and about 1,700 contracted employees. Most of them are involved in code testing and development. New focus is on localization of HCM product for SEA countries.

Financial Advisory Disclosure

Goldman Sachs & Co., and/or one of its affiliates is acting as advisor to Autonomy Corp Plc in connection with a proposed transaction by Hewlett Packard, and as such is an associate of Autonomy Corp Plc for the purpose of the Takeover Panel Rules.

Reg AC

We, Balaji V. Prasad and Rishi Jhunjhunwala, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Investment Profile

The Goldman Sachs Investment Profile provides investment context for a security by comparing key attributes of that security to its peer group and market. The four key attributes depicted are: growth, returns, multiple and volatility. Growth, returns and multiple are indexed based on composites of several methodologies to determine the stocks percentile ranking within the region's coverage universe.

The precise calculation of each metric may vary depending on the fiscal year, industry and region but the standard approach is as follows:

Growth is a composite of next year's estimate over current year's estimate, e.g. EPS, EBITDA, Revenue. **Return** is a year one prospective aggregate of various return on capital measures, e.g. CROCI, ROACE, and ROE. **Multiple** is a composite of one-year forward valuation ratios, e.g. P/E, dividend yield, EV/FCF, EV/EBITDA, EV/DACF, Price/Book. **Volatility** is measured as trailing twelve-month volatility adjusted for dividends.

Quantum

Quantum is Goldman Sachs' proprietary database providing access to detailed financial statement histories, forecasts and ratios. It can be used for in-depth analysis of a single company, or to make comparisons between companies in different sectors and markets.

GS SUSTAIN

GS SUSTAIN is a global investment strategy aimed at long-term, long-only performance with a low turnover of ideas. The GS SUSTAIN focus list includes leaders our analysis shows to be well positioned to deliver long term outperformance through sustained competitive advantage and superior returns on capital relative to their global industry peers. Leaders are identified based on quantifiable analysis of three aspects of corporate performance: cash return on cash invested, industry positioning and management quality (the effectiveness of companies' management of the environmental, social and governance issues facing their industry).

Disclosure Appendix

Coverage group(s) of stocks by primary analyst(s)

Balaji V. Prasad: Asia Pacific Healthcare Services, India Pharmaceuticals, Indian IT Services. Rishi Jhunjhunwala: Indian IT Services.

Asia Pacific Healthcare Services: Masterskill Educational Group.

India Pharmaceuticals: Apollo Hospitals, Aurobindo Pharma, Biocon, Cadila Healthcare, Cipla, Dr. Reddy's Laboratories, Dr. Reddy's Laboratories (ADR), Fortis Healthcare, Glenmark Pharmaceuticals, Jubilant Life Sciences, Lupin, Piramal Healthcare, Ranbaxy Laboratories, Sun Pharmaceutical Industries.

Indian IT Services: HCL Technologies Ltd., Infosys Ltd., Infosys Ltd. (ADR), Mphasis, Patni Computer Systems Ltd (ADR), Patni Computer Systems Ltd., Rolta India, Tata Consultancy Services Ltd., Wipro Ltd., Wipro Ltd. (ADR).

Company-specific regulatory disclosures

The following disclosures relate to relationships between The Goldman Sachs Group, Inc. (with its affiliates, "Goldman Sachs") and companies covered by the Global Investment Research Division of Goldman Sachs and referred to in this research.

Goldman Sachs has received compensation for investment banking services in the past 12 months: Mphasis (Rs340.90)

Goldman Sachs expects to receive or intends to seek compensation for investment banking services in the next 3 months: Infosys Ltd. (Rs2,474.85), Mphasis (Rs340.90), Patni Computer Systems Ltd. (Rs292.20), Tata Consultancy Services Ltd. (Rs1,048.15) and Wipro Ltd. (Rs346.90)

Goldman Sachs had an investment banking services client relationship during the past 12 months with: Infosys Ltd. (Rs2,474.85), Mphasis (Rs340.90) and Patni Computer Systems Ltd. (Rs292.20)

Goldman Sachs makes a market in the securities or derivatives thereof: Infosys Ltd. (Rs2,474.85) and Wipro Ltd. (Rs346.90)

Goldman Sachs is a specialist in the relevant securities and will at any given time have an inventory position, "long" or "short," and may be on the opposite side of orders executed on the relevant exchange: Patni Computer Systems Ltd. (Rs292.20) and Wipro Ltd. (Rs346.90)

There are no company-specific disclosures for: HCL Technologies Ltd. (Rs405.80) and Rolta India (Rs88.85)

Distribution of ratings/investment banking relationships

Goldman Sachs Investment Research global coverage universe

	Rating Distribution			Investment Banking Relationships		
	Buy	Hold	Sell	Buy	Hold	Sell
Global	32%	54%	14%	52%	41%	37%

As of July 1, 2011, Goldman Sachs Global Investment Research had investment ratings on 3,167 equity securities. Goldman Sachs assigns stocks as Buys and Sells on various regional Investment Lists; stocks not so assigned are deemed Neutral. Such assignments equate to Buy, Hold and Sell for the purposes of the above disclosure required by NASD/NYSE rules. See 'Ratings, Coverage groups and views and related definitions' below.

Price target and rating history chart(s)

Compendium report: please see disclosures at http://www.gs.com/research/hedge.html. Disclosures applicable to the companies included in this compendium can be found in the latest relevant published research.

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs usually makes a market in fixed income securities of issuers discussed in this report and usually deals as a principal in these securities.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director, advisory board member or employee of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. and therefore may not be subject to NASD Rule 2711/NYSE Rules 472 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

Distribution of ratings: See the distribution of ratings disclosure above. **Price chart:** See the price chart, with changes of ratings and price targets in prior periods, above, or, if electronic format or if with respect to multiple companies which are the subject of this report, on the Goldman Sachs website at http://www.gs.com/research/hedge.html.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. **Australia:** This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act. **Brazil:** Disclosure information in relation to CVM Instruction 483 is available at http://www.gs.com/worldwide/brazil/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 16 of CVM Instruction 483, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. **Canada:** Goldman Sachs & Co. has approved of, and agreed to take responsibility for, this research in Canada if and to the extent it relates to equity securities of Canadian issuers. Analysts may conduct site visits but are prohibited from accepting payment or reimbursement by the company of travel expenses for such visits. **Hong Kong:** Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. **India:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited; **Japan:** See below. **Korea:** Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. **Russia:** Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. **Singapore:** Further information on the covered companies referred to in this research may be obtained from Goldman Sachs (Singapore) Pte. (Company Number: 198602165W). **Taiwan:** This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. **United Kingdom:** Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Services Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request.

European Union: Disclosure information in relation to Article 4 (1) (d) and Article 6 (2) of the European Commission Directive 2003/126/EC is available at http://www.gs.com/client_services/global_investment_research/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer under the Financial Instrument and Exchange Law, registered with the Kanto Financial Bureau (Registration No. 69), and is a member of Japan Securities Dealers Association (JSDA) and Financial Futures Association of Japan (FFAJ). Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Ratings, coverage groups and views and related definitions

Buy (B), Neutral (N), Sell (S) -Analysts recommend stocks as Buys or Sells for inclusion on various regional Investment Lists. Being assigned a Buy or Sell on an Investment List is determined by a stock's return potential relative to its coverage group as described below. Any stock not assigned as a Buy or a Sell on an Investment List is deemed Neutral. Each regional Investment Review Committee manages various regional Investment Lists to a global guideline of 25%-35% of stocks as Buy and 10%-15% of stocks as Sell; however, the distribution of Buys and Sells in any particular coverage group may vary as determined by the regional Investment Review Committee. Regional Conviction Buy and Sell lists represent investment recommendations focused on either the size of the potential return or the likelihood of the realization of the return.

Return potential represents the price differential between the current share price and the price target expected during the time horizon associated with the price target. Price targets are required for all covered stocks. The return potential, price target and associated time horizon are stated in each report adding or reiterating an Investment List membership.

Coverage groups and views: A list of all stocks in each coverage group is available by primary analyst, stock and coverage group at http://www.gs.com/research/hedge.html. The analyst assigns one of the following coverage views which represents the analyst's investment outlook on the coverage group relative to the group's historical fundamentals and/or valuation. **Attractive (A).** The investment outlook over the following 12 months is favorable relative to the coverage group's historical fundamentals and/or valuation. **Neutral (N).** The investment outlook over the following 12 months is neutral relative to the coverage group's historical fundamentals and/or valuation. **Cautious (C).** The investment outlook over the following 12 months is unfavorable relative to the coverage group's historical fundamentals and/or valuation.

Not Rated (NR). The investment rating and target price have been removed pursuant to Goldman Sachs policy when Goldman Sachs is acting in an advisory capacity in a merger or strategic transaction involving this company and in certain other circumstances. **Rating Suspended (RS).** Goldman Sachs Research has suspended the investment rating and price target for this stock, because there is not a sufficient fundamental basis for determining, or there are legal, regulatory or policy constraints around publishing, an investment rating or target. The previous investment rating and price target, if any, are no longer in effect for this stock and should not be relied upon. **Coverage Suspended (CS).** Goldman Sachs has suspended coverage of this company. **Not Covered (NC).** Goldman Sachs does not cover this company. **Not Available or Not Applicable (NA).** The information is not available for display or is not applicable. **Not Meaningful (NM).** The information is not meaningful and is therefore excluded.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs, and pursuant to certain contractual arrangements, on a global basis. Analysts based in Goldman Sachs offices around the world produce equity research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs & Partners Australia Pty Ltd (ABN 21 006 797 897) on behalf of Goldman Sachs; in Brazil by Goldman Sachs do Brasil Banco Múltiplo S.A.; in Canada by Goldman Sachs & Co. regarding Canadian equities and by Goldman Sachs & Co. (all other research); in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs & Partners New Zealand Limited on behalf of Goldman Sachs; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International, authorized and regulated by the Financial Services Authority, has approved this research in connection with its distribution in the European Union and United Kingdom; Goldman Sachs AG, regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht, may also distribute research in Germany.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman Sachs & Co., the United States broker dealer, is a member of SIPC (http://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and our proprietary trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, our proprietary trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research.

The analysts named in this report may have from time to time discussed with our clients, including Goldman Sachs salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analysts' published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analysts' fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage group as described herein.

We and our affiliates, officers, directors, and employees, excluding equity and credit analysts, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options disclosure documents which are available from Goldman Sachs sales representatives or at http://www.theocc.com/about/publications/character-risks.jsp. Transactions cost may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For all research available on a particular stock, please contact your sales representative or go to http://360.gs.com.

Disclosure information is also available at http://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282.