

# SME CONNECT

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Indian economy has become more global over the years. The business and trade cycle of India has started to follow the cycles of advanced economies.

With increased global integration, the Indian economy now is subject to greater influence of global business cycles.

Hence, if the European crisis continues to spread, it could impact Indian economy as a whole and the SME in particular. Export markets could also decline. But this is also an opportunity to utilize this situation to our advantage by importing technologies, machinery, and products from Europe.

With the increasing gap between the demand and supply of power tapping the solar energy is one of the ideal solutions. We carry an article on this subject which can create new business opportunities for SME.

We have been witnessing continuous increase in bank interest rates and small entrepreneurs are the most affected lot. The Finance ministry and the RBI should take urgent action to reduce the interest rates.

SME in the Service sector contribute quite significantly to the economic growth but were not getting as much exposure as that of the manufacturing sector. Hence SME chamber of India organized a special summit at Mumbai and the proceedings are covered in detail in this issue.

The chamber also organized 2 more important events. "INDIA SME LEADERSHIP SUMMIT" highlighted the necessity to nurture the leadership among SME and the "SERVICE SECTOR SME SUMMIT" provided valuable information and guidance to the entrepreneurs

**Chandrakant Salunkhe****Founder President****Small & Medium Business****Development Chamber of India****Email: sme-chamberofindia@vsnl.net**

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The current financial crisis in Europe and the US can be traced back to the global financial crisis of 2008 that started with collapse of Lehman Brothers, which was supposed to be the most structured bank, in September 2008. The crisis exposed the fragility of the entire banking system and led to economic damage that took three main forms which have now posed a major risk to the world economy: high and rising public debts, fragile banks and a huge liquidity overhang. The 2008 crisis was preceded by rapid credit growth, low risk premium, abundant availability of liquidity, strong leveraging, soaring asset price and development of bubbles in real estate market. The rising liquidity and soaring asset prices gave rise to inflation which in turn put upward pressure on the interest rates which the US and European countries had enjoyed for a long time.

The Euro crisis that has its origin at the heart of the world's largest trading block has been the direct result of sovereign debt crisis in Greece, Ireland, Italy, Portugal and Spain (GIIPS) and the fragile European banks which hold a large part of that debt. Though rising public debt in GIIPS can clearly be identified as the main reason of Euro crisis; however the real cause of crisis goes much deeper. The formation of European Union was characterized by formation of single currency and unified monetary policy. The signing of Treaty of European Union in 1992, laid the foundation for monetary union and adoption of the Euro. The agreement eventually bound the currencies and monetary policy of the signatories to that of Germany, Europe's largest and most stable economy and to those of other successful economies in northern Europe. As a result of this, GIIPS were ripped apart from their independent monetary structure and had to peg their currency to the Euro. This took away their financial independence and their ability to manage their currency as per the market variations.

Investors expected that stability and wealth of European Northern members – Austria, Belgium, France, Germany and Netherlands – coupled with their stronger institutional and economic frameworks will boost the economies of GIIPS and helped them gain confidence in GIIPS countries. The unified monetary policies

# EUROPEAN FINANCIAL CRISIS

by Omesh Kandalkar - Research Analyst, SME Chamber of India



converged the inflation and interest rates levels in GIIPS with those of European Northern members. Also the long-term yields of government bonds of GIIPS vis-à-vis Northern members fell down substantially. Improved confidence and lower interest rates increased the investments in these countries, drove up domestic demand in GIIPS which in turn accelerated their growth and the prices of domestic activities rose relative to the price of exportable & importable products, attracting more investments into the less productive non-tradable sectors.

On the contrary, growing demand in GIIPS countries fuelled the exports of Germany, Netherlands and other stable EU countries and exports rose sharply as % of GDP of these stable countries. The real issue related to GIIPS growth started creeping in as the increased domestic demand induced rapid wage growth that was not in line with their production activity. This in turn increased unit labour costs and thus eroded external competitiveness of GIIPS with respect to Germany where the situation was exactly the opposite. Further the emergence of China, as well as currency depreciation and rapid productivity growth in export sectors of United States and Japan further reduced the competitiveness of GIIPS.

Falling rates of government bonds and

surge in domestic demands boosted tax revenues in GIIPS. Rather than considering this as a source of revenue and using it systematically and strategically, GIIPS government increased their spending. Greece's mess can be directly pointed to blatant financial mismanagement.

Amongst all the GIIPS economies, Greece that had enjoyed sustained growth over many years and most dramatic decline in interest rates and inflation, saw the fall in net foreign assets from -5% of GDP in 1995 to -100% of GDP in 2007. In Ireland and Spain, a strong growth in housing and construction fuelled strong GDP growth and housing prices in these countries rose by 12.5% in Ireland and 8% in Spain which was very high as compared to that of the United States. The rapid growth in housing and construction sector led to surge in inflations levels and interest rates. The housing bubble finally burst with no willful buyers. Sudden surge in output in Greece, Ireland and Spain encouraged private debt and as a result domestic credit grew by an average of 155% compared to average of 27% of European Union Northern countries. In Portugal and Italy, the problems were totally different. These countries suffered extensively from declining productivity and labour market inflexibilities. Further, the weakening of private sector balance sheets led to drop in household savings rate by 4.7% in Portugal and 5.7% in Italy.



All these issues concerning the GIIPS countries were further escalated by the difficulties associated with having single monetary policy in the Euro area. Since their monetary policies were pegged to those of stable EU members, GIIPS lost control over the interest rates and as a result Greece, Ireland and Spain were limited in their ability to handle the bubbles in their economy while Portugal and Italy found it difficult to fight their slowing economic growth. All of these shaped up because though there was a monetary integration amongst EU members there wasn't any fiscal & economic integration, which means that though GIIPS followed the monetary policies of stable Northern EU members, they pursued their own fiscal & economic policies in their respective countries. Also the Euro Zone Treaty failed to lay down a common governance standard which each member country was required to follow. As a result, government of these countries increased their surplus spending unreasonably ignoring the possible budget weakness. Nevertheless the economic weakness surfaced e.g. in case of Ireland, structural deficit showed up as it had ignored cyclical changes in revenues and expenditures. While other GIIPS countries showed signs of fiscal deterioration. Portugal and Italy that had showed the signs of economic slowdown saw rise in their deficits. Greece was a case of blatant mismanagement of resources throwing it into abyss of crisis.

The 2008 crisis exposed the flaws in GIIPS growth, as the tax revenues collapsed and output growth slowed revealing that expanded sectors in each of these

countries were unaffordable. The economic bubbles in Ireland, Spain and Greece burst putting additional strain on the government budgets. The deepening of 2008 crisis increased the borrowing costs and public debt of these countries taking it to the unmanageable levels. Ireland was forced to rescue its hugely expanded financial sector at a cost of 13.9% of its GDP, greatly increasing its difficulties. However with strong structural measures Ireland was able to get out the recessionary mode. In Spain the crisis was mainly due to the long term loans which were primarily for duration of 40 years and the property market crash which included the bankruptcy of several major companies thereby increasing the unemployment rate which touch a high of 21.4% in October 2011. However it is the only country in GIIPS that has the lowest debt to GDP ratio of 60%.

However in case of Greece, Portugal and Italy the outlook remains very bleak because of their high Debt to GDP ratio



which is currently over 100%. Greece is already in the process of being bailed out by the stronger and stable EU members and is being forced to implement severe austerity measures in order to cut their spending. Portugal, on account of its large fiscal imbalances, indebtedness across all sectors and the adverse macroeconomic conditions was recently downgraded by Fitch, one of three leading rating agencies in the world, to BB+ which is the status of junk bonds. In case of Italy, the situation has been the same for past decade; slow growth, declining exports, rising fiscal deficits and public debt has been plaguing the economy. However the real problem for Italy would come in 2012 when its debt, at current is worth \$2.5 trillion, would be due. In case of its inability to repay this huge debt, the economy would be thrown into abyss severely affecting all economies across Europe and thus triggering a wave a heavy recession across the globe.

All these factors have added pressure on stronger EU members as they are currently battling their own slowing economy and facing an increased exposure to these unstable countries. This has dragged down the economic growth of the region, severely affecting the economies across the world. Even France, the second largest economy of Europe, is seeing the prospects of being downgraded from most stable AAA ratings due to increased exposure of French banks to unstable economies of EU, large fiscal deficit and downturn in its growth which proves to be hindrance to meet the deficit.

What is to be seen is how the stable European members like Germany and France take actions in order to bail out these troubled countries and save Euro. The ongoing crisis has triggered the waves of slowdown and uncertainty across the globe. The most important debate for Euro Zone remains as to whether they should let Greece remain in the Euro zone or allow it to part away. Also it is become necessary to renegotiate Euro Zone treaties and allow Brussels to monitor the budgets of its member countries. Further it is necessary for EU to have a greater economic and political integration which in turn would ensure better governance and prevent such crisis from repeating.

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**Mr. Chandrakant Salunkhe** – President, Small & Medium Business Development Chamber of India (SME Chamber of India) and **Mr. Yang Kaisheng** – President, Industrial and Commercial Bank of China (ICBC) inaugurating the Industrial and Commercial Bank of China (ICBC) in the presence of Mr. Yang Kaisheng – President, Industrial and Commercial Bank of China (ICBC)

## INAUGURAL ADDRESS



**Mr. Chandrakant Salunkhe** – President, Small and Medium Business Development Chamber of India (SME Chamber of India) delivering the inaugural address during the Launching Ceremony

global sources

## China Sourcing Fairs

23rd - 25th November 2011 | Mumbai

## INAUGURATION



(Left to Right) **Mr. Tommy T. W. Wong** – President, Global Source Exhibitions, H. E. **Mr. Niu Qingbao** – Consul General, Republic of China, **Mr. Chandrakant Salunkhe** – President, SME Chamber of India and **Ms. Laurra Luo** – Vice General Manager, Cham Battery Technology Co. Ltd. during the inauguration of China Sourcing Fair at Mumbai

# Impact of Current Financial Crisis on Indian Service Sector SMEs

by Chandrakant Salunkhe - President, SME Chamber of India

**T**he global economic meltdown of 2008 had thrown the world in economic depression, which was mainly due to the subprime mortgage crisis that affected the US economy.

The 2011 crisis in the US was mainly because of possible US default as the country's legal debt limit or ceiling of \$14 trillion had reached 97% of its GDP (\$14.5 trillion) in May 2011. Though US Congress initially disapproved to extend the ceiling, it agreed on the extension. However, the major economic shock came when Standard & Poors (S&P), global credit rating agency downgrade US ratings from AAA to AA+ which meant that US treasury bonds which were considered to be safest security in the world were rated lower than bonds issued by Britain, Germany, France and Canada. The rating downgrade also raised the cost of borrowing for American Government, companies and consumers which had direct implication on the world economy as the world largest consumer was thrown in the economic crisis. On the other hand, Euro crisis was mainly due to ever increasing public debt; however the roots of the crisis go much deeper – primarily, giving up their sovereign ability to manage their own fiscal and monetary policy and leaving it to the whim of the Union; and secondly loss of competitiveness that has been associated with Euro adoption in countries like Greece, Ireland, Italy, Portugal and Spain (GIIPS).

The starting point for the Euro Crisis were the Greek politicians and borrowers who played a significant role in both increasing the debt the nation as well as concealing the actual debt numbers. Also the loss of competitiveness amongst the GIIPS countries is attributed to sequence of events:

- ◆ The adoption of Euro by GIIPS countries which led to large fall in interest rates and a surge in investors' confidence as inflation and interest rates converged to those of Europe's northern core countries.
- ◆ Increase in domestic demand, thereby raising the prices of non-tradable activities relative to tradable goods and services; and wages relative to productivity.
- ◆ A rapid acceleration in growth in GIIPS was primarily driven by domestic services, construction and an expanding government spending. However the exports stagnated as a share of GDP; and imports and current account deficit soared due to economic growth in GIIPS

All these factors contributed to very high debt – both public and private.

The Euro crisis threatens economic stability of not only Euro area alone but of the entire world. A weakened Europe implies slower export growth in emerging economies as well as the financial volatility. Emerging economies like India have been impacted by the Euro crisis through three key channels: First is



the impact on the cost of sovereign debt financing for these emerging economies; Second is the trade channel which is driven by the effect of reduced growth in some European countries on import demand for goods and services from India and other emerging economies; and Third is the impact of debt crisis on the global financial sector and the consequent effect on the provision credit to regional banking and financial sectors.

## Impact of the Crisis on Indian Services Sector SMEs

Indian SMEs, both manufacturing and services sector SMEs, play a pivotal role in shaping the economy of India and putting it on a high growth rate. The table below summarizes the contribution of Indian SME Sector:

|   |                                      |
|---|--------------------------------------|
| Number of MSMEs                           | 29.80 Million                        |
| Number of Registered MSMEs                | 1.57 Million                         |
| Employment Provided by MSMEs              | 69.54 Million                        |
| Employment Generated by MSMEs / Year      | 1.3 Million                          |
| Contribution to India's GDP               | 17% (2011)<br>Estimated – 22% (2012) |
| Contribution to India's Exports           | 40% (\$100 billion – 2011)           |
| Contribution to India's Industrial Output | 45%                                  |
| Total Products Manufactured by MSMEs      | 8000+                                |
| Number of MSMEs in Manufacturing Sector   | 28.56% (8.51 Million)                |
| Number of MSMEs in Service Sector         | 71.44% (21.29 Million)               |



Impact of Euro crisis on Indian Services Sector SMEs can be summarized as follows:

**Exports:** The Euro crisis has stalled the major economies of Europe including those of Germany, France and Britain which has resulted in slowdown of demand from Europe - a market that consumes 27% of emerging economies exports. Further Euro has got devalued more than 20% against dollar since November 2009 which has reduced the profitability of exporting to the European market. European Union accounts for 20.2% of India's exports and US for another 10.9%. The slowdown in these two markets that account for almost one third of India's exports has led to the drop in export revenue of India's services SMEs.

**Capital Flows:** The low policy interest rates are being maintained by the European Central Bank because of Euro crisis. Similarly low rates in Japan and United States combined with low growth in Europe have led to the capital inflows in India and other emerging markets. This has led to inflationary pressures in India. This has increased the input costs for services SMEs, who in order to maintain their competitiveness, have found it difficult to raise the cost of their services in comparison to their larger counterparts. This has led to erosion of their profitability.

**Depreciation of Rupee:** Slow growth in Europe led to subsequent depreciation of Euro against the US Dollar. Investors, rather than betting on recovery of Euro Zone found safe haven in US dollar which enabled US dollar to appreciate as compared to other currencies of the world. Dropping exports coupled with rising crude prices created upward pressures on Indian Rupee which in turn depreciated with respect to US \$. Indian services SMEs engaged in providing services to their overseas clients and who had hedged against the dollar at a lower value, have witnessed reduction in profits.

**Market Volatility:** Euro Crisis has added to the volatility of global financial markets which in turn has impacted the Indian financial markets too. High rates of inflation have led to increase in interest rates by Reserve Bank of India. RBI has raised interest rates 13 times since last 20 months. Further volatility in the international markets have led to high bouts of risk aversion by the investors and they have responded by investing in relatively safer bullion market thus increasing the price of gold and silver, thereby pushing the inflation rate still higher. This has increased the cost for these small enterprises in turn affecting their profitability.

**Credit Availability:** Rise in key policy rates (Repo and Reverse Repo) by RBI in order to control the inflation has made loans costlier. This has affected the credit available to enterprises for running their operations. Rise in interest rates has also severely impacted Indian SME sector as the loans have become dearer to them by 3.5% in last 20 months, thereby impacting their input costs & profits. Also the Indian banks have been risk averse in forwarding credit to Indian service sector SMEs as banks have found service sector SMEs to be less credible than the manufacturing sector SMEs.



**Slowdown in the Manufacturing and Services sectors:** Due to the contraction in the European and the US markets, the demand of goods and services from the emerging markets has slowed down considerably. This has slowed down Indian manufacturing and services sector. Indian SMEs operating in these sectors have got severely impacted due to this slowdown, coupled with high inflationary pressures that increased the cost of raw materials and other input costs.

The inflationary pressures have forced the manufacturers and service providers to pass on the cost price rise on the end consumers, thereby increasing the cost of final product. Indian SMEs especially are losing their competitiveness to their larger counterparts due to high price of final products. Further the slowdown in manufacturing activities has further affected the services sector SMEs who depend on manufacturing sector for their business activities.



Financial crisis like the ongoing US and Europe debt crisis impacts unevenly on industries, countries, regions and firms. Therefore there is neither just one way that the crisis affects the businesses nor there is any particular best way to adapt to crisis situation that are applicable to all businesses. Under such uncertain circumstances there is no particular strategy that can guarantee survival or success. Much of it depends on factors like business resources and relations with business stakeholders - partners, competitors, customers, suppliers, government and others.

Following are the key points services SMEs need to keep in mind while deciding on their response to such shocks:

**Business Size** decides the impact of crisis on business and its ability to respond. As compared to their larger counterparts, small enterprises have limited resource base, particularly in terms of finance and management capabilities. This has a direct impact on their ability to understand, analyze and respond to such crisis. At the same time, these firms possess the flexibility to adjust the resource inputs, processes, prices and products quickly in response to the changing market conditions.

**Cost Cutting Activities** like better management of operations, better workflow management, longer working hours and pay cuts will help SMEs to reduce their costs considerably.

**Unexpected Opportunity** as opportunists might term it; recession provides unique opportunity for SMEs to enter into new markets, develop new products and services and secure competitive advantage over others.

**Internal Environment Analysis** can help SMEs understand their own strengths and weaknesses. It will also help them understand their own debt structure. In event of high debt structure, the company can choose to get into forward interest rate contracts after a careful analysis of interest rate scenario. Also they can choose to enter into forward contracts with their suppliers/customers which will help them leverage their finance efficiently.

**New Funding options** like private equity and venture capital can definitely be considered over bank finance. It will not only help the business to get finance to scale-up the operations, but also gets the external experts on board who will help business identify best strategy to handle such crisis situation.

**Price Control** comes with a proper understanding and analysis of macroeconomic situation during crisis. Maintaining the pre-crisis price of the services during the crisis period will lead to lesser customers buying the services. Changing the prices in response to changing macro-economic trends will enable business sell more services and also give it a competitive edge.

**Innovation** is the key driver of small businesses. Crisis period is mainly considered to be bad for businesses as it slows down business activities. However the primary market rule states that demand is always going to exist, it depends on what services business offers to its customers and how. Small businesses can always think of innovative solutions and services that they can offer to their customers. This will distinguish regular firms from great firms

The ongoing crisis has created a big dent in the world economy. Government of every nation is trying in their own means to reduce the impact of the crisis on their nation if not fully protect it. Indian government and RBI till now have played an important and excellent role in reducing the impact of the crisis on Indian economy, industries and SMEs to a larger extent. SMEs however are still struggling to cope up with the crisis situation. Indian government and RBI can consider taking following steps in order help SMEs cope during crisis period:

- ◆ If RBI considers increasing interest rates to be the only option to control inflation, then it should provide concessions to SMEs in other areas such as an extended loan repayment period, EMI free period for 90 days, reduction in EMI or relaxing NPA norms for this sector.
- ◆ Indian SMEs suffer largely due to inadequate infrastructure and high prices of utilities. Government can increase the subsidies for oil, gas, power and exports for this sector. Also they can provide them with adequate and affordable infrastructure and transportation facilities.
- ◆ RBI and Government should make it mandatory on the Corporate sector to pay their dues to SME sector within 30 days
- ◆ The bounce back in SME sector will enable a jump in India's IIP as well as GDP figures
- ◆ RBI needs to focus more on reducing the borrowing cost. Once the borrowing cost comes down, the price of the final product & services will come down too. This will lead to increase in demand and create enough liquidity in the market too.
- ◆ It is important to understand that global crisis is a short-term phenomenon; RBI and Government should mainly focus on long term economic situation and requirement while taking care of short-term requirements.



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# Impact of Interest Rate hikes on SMEs

by V. K. Venkatachalam - Secretary General, SME Chamber of India

**S**MEs play an important role in shaping the economy of the nation. The statistics indicate that SMEs constitutes over 95% of all enterprises in most of the economies. In India there are over 29 million SMEs that employ over 69 million people and produce 8000 different products. They contribute to 40% of India's exports and 45% of the India's manufacturing output.

Their major contribution lies in the country's employment generation and the sector is the second biggest employer after agricultural sector. There are roughly 20.5 million SMEs operating in service sector while remaining 8.5 million in the manufacturing sector of the Indian economy. Though small, these enterprises are front runners in achieving break through innovations in the country.

However they face a variety of challenges like availing timely and adequate bank finance, lack of proper infrastructure facilities, lack of market knowledge, lack of market accessibility to name a few. However the biggest challenge that they face is their exposure to the changing global markets due to globalization. Currently more than anything else these SMEs are faced with biggest challenge of high interest rates charged by the banks which is outcome of high inflation rate.

Inflation in general terms means the rise in price of goods and services which in turns reduces the purchasing power of the money. In India inflation is based on Wholesale Price Index (WPI) where the price level data of 435 commodities is tracked. Also Consumer Price Index (CPI) is used to assess the price changes of consumer goods and services such as food, medical services and its impact on cost of living.



## Inflation rate depends on following factors:

Food and agricultural products; commodity items like gold, silver and other metals; direct and indirect taxes imposed by the government, crude oil and fuel prices; interest rates imposed by the central bank.

There are several reasons for increase in inflation rates of the nation.

- ◆ One of the major causes is the excess currency supply that exists in the economy which pushes the prices of the goods and services upwards because of the high demand and increased purchasing power of the consumers/nation. This is called demand pull inflation.
- ◆ Economic crisis in the major trading partner/s of the nation pushes up the prices of imported commodities, goods and services and also reduces the demand of exported commodities, goods and services.
- ◆ Increase in cost of production is another reason for increase in the cost of final product which in turn pushes up the inflation rate. For example, the increase in cost of raw materials or cost of labour increases the cost of production. This results in company passing on the increased cost to the consumers thereby increasing the cost of final products.
- ◆ Inflation is also caused by international lending and national debts. When a country borrows money from the international market, it has to deal with interest rates which in turns lead to increase in the prices of essential commodities in order to keep up with the national debt.
- ◆ Depreciation in the value of currency in comparison with dollar. It leads to increase in the cost of imports and reduces the overseas prices of the exports. 4% devaluation of currency increases inflation by 1%.
- ◆ Taxes imposed by the government on the consumer products like food products, medicine and fuel has the direct impact on the inflation rates as the suppliers pass on the increase in tax rates on the consumers. Further the increased prices never fall down even if the taxes imposed by the government are later reduced.

All these factors have adverse impact on the economy in number of ways. With the cost of essential items going up, the cost of living goes up simultaneously. The depreciation in the value of money has a strong impact on the lifestyle of people give rise to number of issues like health, crime etc.

However the most immediate effect can be seen on following economic factors which in turn has a huge impact on economy and its people:

- ◆ Decrease in purchasing power of currency and its depreciation. It also impacts the investments in the country.
- ◆ The increase in key policy rates (CRR, Repo Rates & Reverse Repo) by the central bank erodes the value of banks money over the term of their loan and hence they increase the interest rates so as to compensate for the losses
- ◆ It also increases the cost of living which in turns downgrades the economy and discourages the foreign investment in the country.
- ◆ Inflation creates uncertainty in the economy and is dampener to the investment climate, slowing the growth and finally reducing the savings and thereby consumption.
- ◆ Inflation would dampen manufacturers from investing in new equipments and technology thus slowing the process of technology innovation and adoption
- ◆ Uncertainty would force investors and people to withdraw money from highly volatile market and invest in more stable commodities like gold, silver thus increasing their price and further hiking the inflation rate.

Though there are no proven measures to control the inflation, there are few basic steps that can be taken to keep inflation in manageable limits:

- ◆ Primary step that is taken to control the inflation is increasing the key policy rates (CRR, Repo Rates and Reverse Repo) by country's Central Bank.
- ◆ Reduction in the import prices of rice, essential commodities and edible oil to zero depending on the rate of inflation.
- ◆ Ban on exports of essential commodities so as to retain the production for domestic consumption.
- ◆ Reduction in import duty on petrol and diesel and customs duty on crude oil.
- ◆ Increase in export duty in order to address the shortage of essential commodities in the country.

Amongst all the above measures that are taken to manage the inflation increasing key policy rates by Central Bank is more commonly used as there is a direct correlation between interest rate and inflation.

The major reason for rise in inflation is the excess of money or liquidity in the market, which increases the consumers' buying power. This in turn pushes up the demand for the goods and services as compared to their supply thus contributing to their price rise. Monetary Policy aims to influence the overall level of monetary demand in the economy so that it grows broadly in line with the economy's ability to produce goods and services. Interest rates are increased so as to moderate the demand & inflation and are reduced in order to stimulate the demand.

A change in interest rates, affects the cost of borrowing which in turn affects the spending decisions of consumers and firms. An increase in interest rates makes saving more attractive and borrowing less attractive and more expensive. As a result, it reduces current spending by consumers and firms including banks. The increase in these rates drains off the excess liquidity from the market, thereby moderating the inflation levels.

Though the hike in interest rates seems to be a good option to control inflation, it has adverse impact on business environment or the way the business operate. India's apex bank, Reserve bank of India in order to tame inflation, raised the key policy rates for the 13th time in last 20 months, the latest hike being 25 basis points. This hike has taken the repo rates to 8.5% while the reverse repo rates to 7.5%. Also the modal banks base rate of bank (maximum lending rate below which bank cannot lend) increased from 10.25% in July to 10.75% in August, an increase of 50 basis points.

With several companies, especially SMEs, already struggling to cope with the rising lending rates, a further increase in the rates has created a strong impact on businesses. For small businesses that are trying to sustain the high inflation rates, increased input costs and increased commodity prices, the rate hikes have

added to their woes as the cost of credit of these small firms has climbed up drastically. This has reduced their economies of scale considerably, reducing their competitiveness and making it difficult for most of them to survive or sustain. As per analysis, every single percentage hike in interest rates reduces the profits of SMEs by 14% and in some case even 25%.

An analysis of the impact of the rate hike on the Indian market, leads to the conclusion that short-term loans will become dearer for corporate as well as for individuals and which will further discourage consumption. The major impact is felt on the sectors like steel, automobiles, consumer durables, housing and construction.

It is very natural for businesses, under such circumstances, to get demotivated which in turn would affect their business activity. It is rightly said that uncertainties lie at the heart of business decision making in many different kinds of corporations. With the increase in volatility in domestic as well as international markets, hike in interest rate is nothing but obvious. In event of such environment it is crucial for SMEs to:

- ◆ Determine the exposure of their enterprise to the interest rate and market volatility.
- ◆ Dedicate those resources to their enterprise that are consistent with the interest rate exposure. Though the interest rates are highly unpredictable, raising such dedicated resources will definitely improve performance.
- ◆ Look at the enterprise debt-structure to see where locking-in funds for the long term at fixed interest rates might have merit. Also look at short-term/long term debt in light of possible interest rate scenarios.
- ◆ Consider how derivative strategy involving futures, options and swaps can be used hedge against unexpected interest rate movements.
- ◆ Consider optional ways of financing business like venture capital or private equities or getting listed on SME Stock Exchange.

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## Strategies and Initiatives for Sustainable Growth

Friday, 13<sup>th</sup> January 2012 | Mumbai



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# SERVICE SECTOR SME SUMMIT

## Opportunities & Challenges

organised on Friday, 11<sup>th</sup> November 2011 | Hotel Courtyard by Marriot | Mumbai

### Inauguration of the Summit



(In Picture 1) Mr. S. K. V. Srinivasan – Executive Director, IDBI Bank inaugurating the summit. (In Picture 2 Left to Right) Mr. Om Prakash – Director, INORBIT Tours Pvt. Ltd., Mr. Chandrakant Salunkhe – President, SME Chamber of India, Mr. Shirish Shenolkar – AVP, Tata Teleservices Ltd., Mr. U. Venkataraman – Executive Director, MCX Stock Exchange Ltd, Mr. S. Kakkar – General Manager, UCO Bank Ltd., Mr. S. K. V. Srinivasan – Executive Director, IDBI Bank, Mr. Dinesh K Pillai – CEO, Mahindra Special Services Group and Mr. D. Ravishankar – Founder Director, BrickworkRatings India Pvt. Ltd.

## Chief Guest Address by Mr. S. K. V. Srinivasan – Executive Director, IDBI Bank



SME Sector specially the service sector plays an important role in terms of overall development of economic, social and employment generation in the country. He has emphasised the need for innovation in the sector for greater growth.

SMEs are like a steroid for growth, meaning that for a unit of capital inducted, they create 10 times more employment than a big company. Therefore, it is essential to bring in social equity in the economy, said Mr. Srinivasan. The unemployment is the main cause for the increased crime rate in the country and hence all efforts should be made to create sustainable employment opportunities. Service SME Sector provides lot of services directly to the consumers as well as support the manufacturing sector.

SMEs do very well in the innovation intensity index which is a measurement of contribution of innovation and new products in the last three years in an

enterprise to the revenue generation. This is primarily because more innovation are happening in the SME Sector and it will happen more in this Sector and the growth will be more phenomenal in the coming years. The Banks therefore should pay special attention to the Service Sector SMEs to enable them to sustain and grow.

As per a comparison study of small and large scale industries the incremental funding comes for SME is hardly 15% whereas it is as much as 45% for medium and large enterprise, said Mr. Srinivasan. SMEs therefore should have other options for funding such as Venture Capital, Private Equity and other sources. He mentioned that this fact is to be recognised and policies and initiatives have to be devised by the concerned authorities in order to ensure adequate flow of funds to the SME Sector to meet their requirements.

Over a period of time Banks should not have issues for funding to SME Sector primarily because, they have realised that

SME are to be looked as a profitable business proposition and not as a regulatory prescription.

Lending to these SME Sector enable Banks to have a decent spread of risk when compared to a few corporate who could command a better rate of interest.

Banks do look SME as an important sector in a pure business proposition, but the information flow from SME to banks is not very structured. Bank officials should have special skills to understand the needs of this Sector and devise products and services to cater to them. Banks are also training their officials to deal effectively with the SME Sector. SMEs which are rated by 3rd party rating agencies are preferred by Banks and they get concessional rate of interest.

If all these initiatives are properly implemented, the Banks will be in a position to meet the requirements of the SMEs in the right earnest concluded Mr. Srinivasan.





## Address by Mr. U. Venkataraman - Executive Director, MCX Stock Exchange Ltd

At the outset Mr. Venkataraman said that SMEs are doing a marvelous job, due to their remarkable contributions to GDP, exports and employment. In many economies of the world, service sector play a vital role and therefore Indian Service SME too has very good opportunities and potential to grow.

SMEs in general face many problems such as raising the Capital, use of outdated technology, machinery and ineffective marketing. He emphasised the need to adopt ICT solutions which is very important for growth. Internet is the best medium in the present juncture since it has got many advantages for the growth of a business. As far as finance is concerned, bank finance, venture capital, private equity and angel

investors etc. are available and SMEs should be well prepared to avail of these through appropriate information and documents.

SME stock Exchange will be a boon for SME to raise capital from market. Many entrepreneurs possess a high level of intelligence and skill to start and establish enterprises but could not do so due to non-availability of sufficient capital. SME stock Exchanges will provide a useful platform to these SMEs to raise capital and scale up activities which will generate more employment.

MCX offers currency hedging and he insisted the SMEs to take advantage of their services whenever required.



## Address by Mr. Chandrakant Salunkhe - President, SME Chamber of India

Service Sector SMEs along with Manufacturing Sector plays a vital role for the economic development of the Nation. Every manufacturing unit requires the support of the Service Sector and vice versa. It is very important to provide a platform to the SMEs engaged in Service Sector to discuss and understand the various opportunities available to them and the way to achieve organizational growth which will in turn strengthen the national economy. Therefore the service sector should be provided with all necessary support.

SME Chamber of India focuses its attention on Service Sector SMEs in infrastructure, realty, hospitality, retail, environments, information technology, besides others to empower the emerging service sector SMEs to be competitive and successful, observed Mr. Salunkhe.

Due to economic slowdown in USA and European countries many companies are looking towards Indian SME manufacturers and Service providers for best quality products and services and therefore there is a great opportunity for doing business with European countries in many sectors. He also stressed the need

for participating in various international exhibitions to understand about various market trends and new ideas.

Mr. Salunkhe also touched upon the matter of delayed payment by the purchasers, which forces SME into NPA. This is a serious matter considering the financial limitation of the SMEs and he emphasised the need for timely payment.

There are opportunities everywhere and in every field for SMEs and the only requirement is that SMEs should be prepared to avail of them for their growth, said Mr. Salunkhe. He suggested SME to avail Venture Capital and Private Equity funds for growth.

Mr. Salunkhe announced the setting up of SME Employment Exchange an initiative of SME Chamber of India. This will cater to the needs of trained and skilled manpower by the SME Sector. Retention of good talents enables the enterprise to grow faster.

Mr. Salunkhe also mentioned about the need for proper marketing and branding strategies to access international markets and said that the Chamber is providing all necessary assistance in this regard.



SME Services Sector growth has been very commendable, observed Mr. Salunkhe, citing statistics from 1950s till 2009 and there is scope for further growth in the coming years, provided they adopt new ideas, technology, innovation and new marketing techniques, concluded Mr. Salunkhe. He also assured the SMEs that the Chamber will make all efforts to bring Service Sector SMEs and Manufacturing SMEs together for better connectivity and growth



## Address by Mr. S. Kakkar - General Manager, UCO Bank Ltd

While quoting examples in Agriculture and Industry in the northern parts of the country, Mr. Kakkar said that the green revolution in agriculture started in 60s in Haryana, Punjab and part of Uttar Pradesh. Because of indiscriminate usage of fertilizers, high yielding varieties of crops and excessive irrigation, the lands have become barren and nothing can be grown. Now they are trying to treat the land with gypsum to restructure it and make it fit for agriculture.

Mr. Kakkar explained about the need for risk taking ability by SMEs to grow and to become successful.

There are also other challenges such as acute shortage of labour in agriculture

and industry as well as geographical bottlenecks. The SMEs are no more toddlers, and do not need hand holding to walk. They have grown now and can take care of themselves. The bank tells the SMEs that their book debt should not be more than 90 days whereas many of the SME customers do not pay within 90 days.

As far as UCO bank is concerned, Bank is trying to do its bit by setting up SME hubs across the country including Mumbai and Chandigarh and by March, 2012, more SME hubs will be added. Many other banks are also working on the same lines recognizing the importance of SMEs. He concluded saying that SMEs in North India especially in Ludhiana cooperate with the banks to create mutual trust.

## Address by Mr. D. Ravishankar - Founder Director, Brickwork Ratings India Pvt. Ltd



Elaborating on the perception about SMEs by the lenders, Mr. Ravi Shankar pointed out that SMEs are Very Diverse in Nature and normally the owners mix up Business and Personal Finances. They do not possess third party Independent Analysis (Ratings). Banks find lending to SMEs Costly due to high Cost of traditional Risk Assessment Methods. Small enterprises maintain limited audited financial statements. Their inability to offer collateral is perceived as a risk. Due to their small ticket sizes, SMEs are more vulnerable to Credit losses.

SME Rating is an independent opinion on the credit quality of the SME, which involves detailed analysis of financial performance, management capabilities, industry factors, company's business model and its track record. The rating is valid for one year and can be renewed on request. In Business Confidence index for SMEs, Service Sectors SMEs score better rating on all 13 out of 14 parameters. He also suggested that the MSME Ministry should provide incentives and concessions to SMEs to obtain credit rating on continuous basis

## Address by Mr. Dinesh K Pillai - CEO, Mahindra Special Services Group



As per the current trend, India may achieve 7.2% GDP growth against the projected figure of 8.7%.

Despite having all potential for progress India in not catching up with China because there are different social, political and economic systems in both the countries. The progress is slow due to poverty and the life style in the country, said Mr. Pillai. Although there are many government funded programmes, but in reality they do not reach the right people.

India has many SMEs and a large number of units in the SME sector are becoming sick or getting closed which is totally worrying. The entrepreneurs have vision and intelligence and they are good in their activities. They start the ventures and collapse within a few years as they lack managerial skills. To overcome this situation he stressed on the importance of treating customers as partners and recruit skilled people even better than the owner himself.

### Address by Mr. Om Prakash - Director, INORBIT Tours Pvt. Ltd.

At the outset, Mr. Om Prakash appreciated and lauded the various initiatives of the SME Chamber of India for the development of SME Sector. He stressed the need for the international connectivity for better growth for which it is essential that SMEs should make it a point to attend international exhibitions in various countries to show case their products, understand their requirements and capture business opportunities.

35 years ago, an entrepreneur was eligible for 100 USD per trip as forex. Compared to olden days, today visiting foreign countries to attend exhibitions and business development are much easier with ample availability of forex. By attending international level general and industry specific exhibitions, the SMEs will have an opportunity to interact businessmen not only from the host country but also from many other countries.



### Address by Mr. Shirish Shenolkar - AVP, Tata Teleservices Ltd.

He briefly explained about the various supports and services provided by Tata Teleservices for SME Sector in the fields of information and communication technology. He explained the need for adoption latest technology for business growth. As one of the pioneer companies providing internet services from a

residential to an SME to a large company or corporate as the internet has become the backbone of any business. He explained various technologies and models and offered all support and assistance from the Tata Teleservices as per their specific requirements as a Consultant and then a partner.



(Dignitaries Left to Right) **Mr. Shirish Shenolkar** – AVP, Tata Teleservices Ltd., **Mr. Om Prakash** – Director, INORBIT Tours Pvt. Ltd., **Mr. S. Kakkar** – General Manager, UCO Bank Ltd., **Mr. Chandrakant Salunkhe** – President, SME Chamber of India, **Mr. S. K. V. Srinivasan** – Executive Director, IDBI Bank, **Mr. Dinesh K Pillai** – CEO, Mahindra Special Services Group, **Mr. U. Venkataraman** – Executive Director, MCX Stock Exchange Ltd and **Mr. D. Ravishankar** – Founder Director, Brickwork Ratings India Pvt. Ltd during “Service Sector SME Summit – Opportunities & Challenges” organized by Small & Medium Business Development Chamber of India on 11th November 2011 at Mumbai.

## PANEL DISCUSSION ON OVERVIEW, SCOPE, ISSUES AND GROWTH OF SERVICE SECTOR SME

The panelist session chaired by **Mr. Girish Bhagat** – Director, IndiaNivesh Ltd., led to very important outcomes for service sector SMEs like; various sources of funds available for SMEs, why private equity and venture capitalists prefer service sector SMEs over manufacturing sector SMEs, various retail formats available, various challenges for retail stores, importance of building brands for SMEs, importance of seeing challenges as opportunities and capitalizing on it.

Overall the Summit highlighted the various opportunities and challenges for Service Sector SMEs and what strategies these SMEs can adopt in order to survive these challenges or encash on the opportunities. SME Chamber of India plans to conduct Summits for Service Sector at the same level in different parts of the country.



Panelist (L to R) **Ms Sangeeta Modi** – Founder Partner, Access Asset Managers, **Mr. Jay Gupta** – MD & CEO, The Loot (India) Pvt. Ltd., **Mr. Chandrakant Salunkhe** – President, SME Chamber of India, **Mr. Pankaj Bhandula** – Sr. VP, Lavasa Corporation Limited, **Mr. Girish Bhagat** – Director, IndiaNivesh Ltd., **Mr. Sachin Pillai** – Group Business Head, Reliance Capital Ltd., **Mr. Rajeev Ruia** – Chief Strategist, BS & D and **Mr. Vishal Gandhi** – Advocate & Solicitor

## ADDRESS BY PANELISTS

**Mr. Sachin Pillai** – Group Business Head, Reliance Capital Ltd. addressing the delegates on “Funding Opportunities for Service Sector SMEs”



In the panel discussion on “ Overview, Scope, Issues and Growth” Mr. Sachin Pillai gave a presentation and speech on “ Present Outlook on Indian SME Sector”, “ important information on Reliance Capital, Reliance Commercial Finance (RCF), Challenges in Funding for SMEs, Assessment Criteria, RCF positioning w.r.t. SME and RCF offering for SMEs.

According to him the funding agencies face many challenges for funding to SMEs due to several reasons. SMEs are perceived to have inherent shortcomings

such as lack of access to formal capital markets, relatively opaque financial model due to higher reliance on alternative funds and off balance sheet transactions. Majority of SMEs decide the amount of tax to be paid and show the profit in the balance sheet according to that.

There are no effective industry wide platform for data sharing on defaulting companies and assignment /refinancing of such loans.

### Ms Sangeeta Modi – Founder Partner, Access Asset Managers addressing the delegates on Private Equity and Venture Capital Funding Opportunities

Some of the start-ups and fast growing SMEs need more and quicker funds for their growth which cannot be readily available from the banking sector. Venture capital usually denotes investment of funds into a new highly profitable venture. Private Equity is meant for the running companies. But now-a-days the demarcating line is getting blurred.

Investment themes of venture capital and private equity funds differs. They Ideally look at EBIDTA margins in excess of 15% and net margins in excess of 7-8% and the ability to leverage. The main focus is on Return on Net worth and Return on Capital

employed and not just margins. To understand the scalability of the business, PE funds will take an immense amount of time and effort in understanding the business. Investors derive comfort from the entrepreneurship drive, skills and transparency of the promoter. The business model should be amenable to an exit in 3-5 years time.

The venture capital and private equity are the best alternative source of funding for SMEs. The SMEs should prepare a very attractive business plan to convince the lender Institution about the viability and profitability of the business.



### Mr. Jay Gupta – Managing Director & CEO, The Loot (India) Pvt. Ltd. addressing the delegates on Opportunities and Challenges in Retail Business

The retail format has changed considerably over the last 12 years and more so during the last 5 years. A few positive aspects of the retail trade is that the rentals are coming down to a reasonable level. In some cases it about a third of what it was 5 years back. Secondly, because of the emergency of huge malls, today trained manpower is easily available. On the negative side, around 95% of the retail trade is unorganized. This sector need to be organised and modernized in order to take advantage of the huge market potential. The roadside chaiwala model

has been adopted by the latest coffee shops. The fundamental principle is to provide a place to sit and discuss. The challenges for the retail trade is that they have to pay excise, octroi, service tax in advance which increases the cost of operations as high as 35%. Added to this is around 10% towards logistics which makes to a total of 45%.

He wondered whether there is any bank that can give loan for payment of various taxes! As the people relocate to other places, the retail trade also follows them.



### Mr. Pankaj Bhandula – Sr. VP, Lavasa Corporation Limited addressing the delegates on Emerging Business Opportunity in Infrastructure, Entertainment and Tourism

“Big Obstacles brings Big Opportunity” both in life and business, observed Mr. Bhandula. The infrastructure industry is doing extremely well and a huge amount of outlay is in the pipeline. The Service Sector will always have a growth potential. To cite an example once it was considered that the radio will be obsolete after the introduction of TV. But what we find today is that the Radio Stations are proliferating much more than in the previous past. The entertainment and media is growing at 19%, while the radio and internet are growing at the rate of 50% every year. If we take the tourism sector, the total

number of rooms available in India is 95, 000 whereas in Singapore which is 1.5 times the area of Mumbai have 45,000 rooms. 56 million Indian have travelled abroad which is around 2 times the population of Australia. The saddening fact is that the inbound tourist to India is 0.5% of the Global Tourists. There is a tremendous potential in the tourism sector in India which have world class mountains, valleys, rivers, beaches, monuments, forests etc. in various locations. The problem is that this sector is very much unorganized.



## Mr. Vishal Gandhi – Advocate & Solicitor addressing the delegates on Legal Traps to avoid while Raising Venture Capital and Private Equity



Mr. Gandhi thrust upon the major legal aspects to be taken care with regard to obtain venture capital and private equity funding. There is always a conflict of interest between the lender and the borrower and therefore all the aspects of a deal and the terms and conditions should be conspicuously spelt out in the agreement. There may unreasonable demands by the lenders forcing the borrower to take back the shares in case of down trend. The borrower should safeguard his position in the organisation by retaining sufficient equity. The agreement should also specify clearly the role of the lender in the Board of Directors to manage the day-to-day operations and

his veto power. Since there may be lot of clauses which may not be understood by the entrepreneurs they should appoint a legal person having expertise in dealing with the venture capital funds. There are many points to read between the lines. As the lender resort to due diligence process in identifying the right borrower, the borrower should also resort to due diligence process of identifying a borrower who is genuine and will stand by and support the growth of the organisation. He also suggested that in the contract there should inevitably be a clause for arbitration which will avoid lengthy legal procedures in the event of disputes.

## Mr. Rajeev Ruia – Chief Strategist, Business Strategy & Design (BS & D) addressing the delegates on Marketing, Promotion and Branding – Strategies & Initiatives



There is a wrong perception amongst SMEs that branding is not for them and is meant for only big corporate, which can be nothing but true. The world 'large' is a relative term and is a perception. As SME grows and enter into world markets, the brand plays a vital role and becomes an important aspect of the business.

Brand could be a name, a symbol, a logo, an individual, a products or a service. Brand equity means the goodwill earned which are linked to the brand and treated as assets of the company. Like a building, brand is an architecture meaning that it has to be built brick by brick over a period of time. The branding building architecture should address several questions such as whether the business is adequately focused, is there a growth

policy, is there a HR policy, is there a market development policy and is there a pricing policy. If a company makes a statement that its goal is to increase the turn over within 5 years, it does not convey the real picture. This is not a vision statement. An example is that - we will double our turn over within 5 years by expanding the markets for our current product line (leather shoes) and to enter into leather suitcase market.

A product of Tata whether it is salt or steel, commands trust of the masses because of the brand equity built over the years, which shows the trust of the customers on the quality, price and service. It is the competitive differences that brings more customers.

## Mr. P Sengupta – Asst. General Manager, SME Hub UCO Bank Mumbai addressing the delegates on Role of Bankers for the promotion of Service Sector SMEs



UCO Bank is offering a single window clearance to provide loans to SMEs through their special SME hubs at Mumbai. This caters to the needs of SMEs from 25 lakh to 25 crore. The bank interacts with the borrowers to assist them to comply with the formalities as well as send their Marketing Executives to their office for any assistance or guidance.

The proposals are scrutinised and apprised in the Central SME Hub to facilitate faster disbursement of loan. The same format will be replicated in other parts of Maharashtra as well as other States.

## OPEN FORUM DISCUSSION AT THE SUMMIT



Delegates asking questions and queries to the panelists during the open forum discussion at the Summit



**Mr. Girish Bhagat** – Director, IndiaNivesh Ltd. addressing the questions of the delegates



**Mr. Sachin Pillai** – Group Business Head, Reliance Capital Ltd. addressing the questions of the delegates



**Mr. Rajeev Ruia** – Chief Strategist, BS&D addressing the questions of the delegates

## GATHERING AT THE SUMMIT



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# INDIA SME LEADERSHIP SUMMIT

organised on Friday, 26<sup>th</sup> August 2011 | Hotel Hyatt Regency | Mumbai

## Inauguration of the Summit



Dr. Subir Gokarn – Deputy Governor, Reserve Bank of India inaugurating the Summit organized on 17<sup>th</sup> Foundation day of the SME Chamber of India. Other Dignitaries (L to R) Mr. M.V. Tanksale – CMD, Central Bank of India, Mr. Chandrakant Salunkhe – President, SME Chamber of India, Mr. M. Narendra – CMD, Indian Overseas Bank and Mr. Madhu Kannan – MD & CEO, Bombay Stock Exchange

## Release Of SME Connect Magazine Issue 3



Dr. Subir Gokarn – Deputy Governor, Reserve Bank of India releasing SME CONNECT – Magazine and Activity Report of the Chamber at the inaugural of the Summit. Others. (L to R) Mr. A. Ramesh Kumar – MD & CEO, Asia Pragati Capfin Pvt. Ltd., Dr. Lalit S Kanodia – CMD, Datamatics Global Services Ltd., Mr. Ramesh Iyer – Sr VP & Head, SME and Wireline Business, Tata Teleservices Ltd., Mr. M. Narendra – CMD, Indian Overseas Bank, Mr. Chandrakant Salunkhe – President, SME Chamber of India, Mr. M.V. Tanksale – CMD, Central Bank of India, Mr. Sanjay Sethi – Development Commissioner (Industries), Govt. of Maharashtra, Mr. Pankaj Baliga – Vice President, Tata Consultancy Services, Mr. Madhu Kannan – MD & CEO, Bombay Stock Exchange Ltd. and Mr. Sachin Pillai – Group Business Head, Reliance Commercial Finance Ltd

## Inaugural Speech by Chief Guest Dr. Subir Gokarn – Deputy Governor, Reserve Bank of India



Dr. Gokarn, Chief Guest, congratulated the Chamber for identifying the innovation and excellence amongst the SMEs & conferring “SME Innovation” and Excellence Awards” on successful entrepreneurs.

“Excellence means doing things very well and innovation refers to doing new things or doing things in a different way” said Mr. Gokarn.

While addressing the issues faced by SME Sector, he mentioned that suitable policy frame work needs to be created to deal with the problems of SME and to make them an attractive channel for investment. Small enterprises in every country face huge challenges.

He pointed out the sets of factors that need to be considered in order to make

SME Sector viable and competitive. The first factor is the entrepreneurs themselves. They start an enterprise to fulfill their vision by bringing together technology and other resources. He observed that some SME businesses may fail, but those who succeed not only create for themselves the opportunities to grow but also become the role model for other entrepreneurs.

The second factor is cluster development. Clusters are meant to collaborate and collectively address the issues related to procurement, environmental management, marketing and or collectively interact with clients. The prospects of success are higher in the organic clusters or the clusters that emerge spontaneously as a result of the ability of entrepreneurs

to get together to address certain collective needs than the inorganic clusters. Dr Gokarn further observed that the large companies reap huge benefits due to economies of scale which is not available to small enterprises. But they can get the same benefits through formation of clusters.

The third factor is the role of Government and policy intervention to make SME sector more viable and competitive. He stressed the need for constructive support which is a support that helps builds competitiveness.

While addressing the financial problems faced by SMEs Dr. Gokarn said that Banks should support the SME sector on all possible ways with effective risk management.

## Exchanging of MoU



Mr. Chandrakant Salunkhe – President, SME Chamber of India and Mr. R. Seetharaman – CEO, Doha Bank Group exchanging MoU of cooperation at the inaugural of the Summit

## Release of the Book, GOD LIFE & BUSINESS



Dr. Subir Gokarn – Deputy Governor, Reserve Bank of India releasing the Book GOD LIFE & BUSINESS written by Mr. Pankaj Bhandula at the inaugural of the Summit.

## Address by Mr. M. Narendra - Chairman &amp; Managing Director, Indian Overseas Bank



Mr. M. Narendra, CMD, Indian Overseas Bank in his keynote address congratulated Mr. Salunkhe, President, SME Chamber of India for his dedicated services in the promotion of SME movement in the country and his objective to empower SME to be globally competitive.

SME sector is no more a mere ancillary arm of the manufacturing sector. SMEs operate in every field of the economy whether it is agriculture, industry, services or exports. Indeed, one cannot underestimate the role of SME sector in the future development of the Indian economy. There is an imperative need to nurture, develop and expand the span and capacity of the sector, said Mr. Narendra.

SME sector should not simply be satisfied with domestic markets. They have to become global players because globalization impacts business everywhere today. Today's sales and purchase are global in reach. Due to tremendous progress in information and communication technological and improved logistics facilities SME to explore

global markets. For growth-oriented SMEs, exports will be an important strategic option to achieve continued business growth. Focus on SME sector is very essential if India is to emerge a Manufacturing Hub in Asia, said Shri Narendra.

He said that there are no two opinions that the SME sector needs a lot of hand-holding, whether it is government policy and support, bank finance or marketing support. The sector is largely driven by individuals who are creative and enterprising. However, for the sustained growth of this sector we need to constantly groom leaders of tomorrow. Not Creating SME leaders of tomorrow is the biggest problem in the SME Sector. To some extent SME leadership may be self-generated, but on the whole we need to build the capabilities of SME leaders, observed Mr. Narendra.

SMEs which desire to enter the export market need a much higher degree of commitment, determination, persistence and business acumen. They should develop a global outlook and learn the global best business practices.

For the transformation of SME entrepreneurs into successful leaders, he suggested that Education and training are more important. They can favourably impact the performance of entrepreneurs and their executives during business start-ups, business survival and business development. Entrepreneurial education can also have long term impacts on developing the attitudes which are fundamental for growth.

While education and training are important, SME entrepreneurs must also emulate the SME leaders who have established themselves and attained great success and keep them as role models. They are the best source of practical wisdom, courage and determination.

Mr. Narendra also elaborated in detail about various initiatives and simplification of procedures introduced by Indian Overseas bank for making available timely finance to the SMEs for their business growth.



## Address by Mr. M.V. Tanksale - Chairman & Managing Director, Central Bank of India



At the outset, Mr. Tanksale congratulated Mr. Salunkhe for the excellent services of the chamber for the benefit of the Small and Medium Enterprises.

The role played by Small and Medium Enterprises (SMEs) for achieving sustainable economic growth is extremely important due to its significant contribution towards economy, exports, employment generation, balanced regional development and overall poverty reduction, observed Mr. Tanksale.

He mentioned that given the national significance of SME sector, it is imperative that all the stakeholders like Government, Banks, Financial Institutions and Entrepreneurs play their respective roles in creating a conducive ecosystem for providing required support to SMEs, especially in view of the typical limitations and constraints faced by them.

As far as the Banks are concerned, financing the SMEs is no longer seen as a mere compliance function to achieve the priority sector lending targets and sub-targets. Central Bank of India has

identified SME sector as thrust area and we see vast opportunity in this sector, said Mr. Tanksale.

It is a fact that failure rate in SME sector is relatively high – the reasons for which range from delayed/inadequate availability of credit to non-availability of backward and forward support system.

In order to achieve a more transparent, fair and reliable system to deal with the problems of Non-performing Assets (NPA) among SMEs, the collaborative role of all the stakeholders is necessary.

An effective credit guarantee system is one of the ways for providing comfort to lenders and the same is available. The entrepreneur's wishes to keep the channel of communication with bankers open during troubled times to enable the banks to extend timely financial support and advice to tide over the problems faced by them.

Understanding the genuine problems of the SME entrepreneurs and a solution finding approach on the part of the bankers would go a long way in building

mutual trust.

Timely rehabilitation measures are crucial for survival of small enterprises which would serve the interest of all stakeholders. The process of rehabilitation has to be quick.

If India has to achieve a growth rate of 8-10 percent over the next couple of decades it needs a strong SME sector, without which it cannot be achieved, said Mr. Tanksale. Central Bank of India has been accorded high priority to this sector. The Bank has been continuously making efforts not only to provide differentiated products for SMEs but also has been striving to address their needs by guiding and counseling them from time to time.

Mr. Tanksale said that all the stakeholders' viz. Government, Banks and Financial Institutions entrusted with development of the SME sector need to focus on providing an enabling environment complete with required infrastructure and forward and backward linkages for promoting this important sector concluded Mr. Tanksale.



## Address by Mr. Sanjay Sethi, Development Commissioner (Industries), Govt. of Maharashtra

Mr. Sethi said that we have not yet reached the inclusive growth although there is a consistent growth.

He said, "The gap between the developed States and not so developed States and developed industrial parts and not so developed parts seems to be something that we cannot address".

Maharashtra got about 1.16 lakh crore of investment in the form of mega projects. However, the benefit that accrued to MSME in fact went lesser than the period comparable to the corresponding period. He mentioned that without mega investment the SMEs cannot tap in their potential and many SMEs had to close down their operations despite the mega projects.

He further stressed that SMEs can grow on their own because of the various clusters that have come up in the State. The fact that the Units can come together,

use a particular technology and have marketing linkages has made them to remain competitive in various parts of the State.

Government of India and Government of Maharashtra have schemes through which clusters are given various incentives. There is also a scheme for industrial infrastructure upgradation for which upto Rs. 60 crore are given for infrastructure development such as testing centre, Machinery and R& D facilities. About 50 such clusters are taken care of in Maharashtra so that MSMEs can grow and can add value without a direct link with the bigger anchor units. This is not to say that those mega investments will not produce the kind of investment multipliers.

The Government of Maharashtra also offers a basket of fiscal benefits in terms of interest rate concessions and power tariffs to SME clusters, said Mr. Sanjay Sethi.



## Address by Mr. Madhu Kannan - Managing Director & CEO, Bombay Stock Exchange Ltd.

Mr. Madhu Kannan said that the application for SME Stock Exchange has already been filed and within a short period of time the clearance is expected. He explained in details about the three aspects i.e. demand side, supply side and the platform side of the Exchange.

Though there are millions of SMEs in the country, as per Mr. Kannan, the SMEs those are going to participate in the supply and platform side will be meagre. On the demand side, they have short listed around 4000 odd SMEs which have some sort of potential to get listed on SME Stock Exchange. On the supply side necessary awareness is being created amongst the SMEs to understand more about the intricacies involved and looking at financial institutions and banks which can support.

He also spoke about governance architecture. Sometimes it would be very onerous for a small company to adhere to the governance requirements imposed by the Regulatory authorities. It is

therefore necessary for the policy makers to see that how the spirit of governance is maintained without affecting the cost of the governance for implementing such governance. Another point he mentioned is about the importance of training SMEs to create awareness on the demand side as well as the supply side.

SMEs should not look at the exchange as a way to get the capital easily but should look at creating a sort of an ecosystem to enable them to understand what actually a SME Stock Exchange is and how it functions so that after a gap of 3 years they can raise the capital through the Exchange.

Mr. Kannan is optimistic that the proposed SME Stock Exchange will soon be a reality and the SME Sector will be immensely benefited



## Address by Mr. Pankaj Baliga - Vice President, TATA Consultancy Services



Mr. Baliga outlined the various challenges and roadblocks Small and Medium Businesses face in their growth story like non-availability of timely credit from banks and financial institutions, high interest rates, absence of infrastructure, procedures connected with export incentives and subsidies which continue to be cumbersome, low production capacity and use of obsolete technology.

In view of this, TCS which is one of the early movers in the Small and Medium Business solutions space, interacted with multiple entrepreneurs across the country to develop a deep understanding of their technology consumption pattern and associated challenges. TCS realized that the IT needs of Small and Medium Businesses were unique and needed a distinctive approach to meet their profitability. It is with this background TCS pioneered iON, a pre-configured hardware and software network bundled

together and backed by business, technical and consulting activities. iON has been developed to deliver IT in the 3rd generation service model to Small and Medium Businesses. In this model, using the very latest in scalable cloud computing technology, iON removes the need for Small and Medium Businesses to invest in IT assets and retain scarce IT talent. Through pay-per-use business model, iON helps SMEs leverage world class-technology at an affordable cost.

He further mentioned that pay-as-you-use model would eliminate capital investment as TCS would provide IT infrastructure and software on rent. The rent is charged monthly as per the usage and number of users using the software. Typically, the cumulative rental for three years is equal to the capital cost of acquiring similar or lesser software with one-time payment. Usually, the ROI exceeds rental within three month, when best practices are well

followed. The rental includes maintenance and training, with no hidden costs.

This means that SMEs need not invest in Servers, in implementing ERP, Network costs, Hardware etc, they just connect and then pay as they use. SMEs also have a choice of modules as per their key focus areas like Accounting, HR, Inventory, Purchase, Sales Force, etc. and then gradually move to include all the other modules.

TCS iON has created a 3rd Generation Services model for the first time in the world and build an unmatched reach in this country through 99 of India's best in Class Cloud Services Partners with 24 x 7 Cloud Desk to service customers. More than 250 Small and Medium Business across India are leveraging the iON solution and have reduced their total cost of technology ownership by 35-40%.



## Address by Dr. Lalit S Kanodia - Chairman &amp; Managing Director, Datamatics Global Services Ltd



Dr. Kanodia highlighted the vital role played by SMEs for the growth of the Nation. It is complimentary to the Large Scale Sector. They are not competing with the large scale sector but co-exist with one another in terms of national growth. The first and foremost need for growth of SMEs is innovation. As per his observation there are not enough innovations in large companies.

All latest innovations have come from the SME sector, observed Dr. Kanodia. According to him SME Sector is far more efficient than the Large Sector, may be not in terms of capital and automation. But still SME sector is the large manufacturer of quality products. As per Dr. Kanodia, for national development, India should borrow the German or Japanese Model. For example, most of the components for the big projects are designed and manufactured by the Small

Units. Therefore both large and small enterprises have a reason to co-exist. Large enterprises can raise big capital with good strategies marketing and sales, which small enterprises cannot afford considering their various limitations. It is very difficult for a small enterprise to organise a global marketing and sales network as that of the large enterprises, observed Dr. Kanodia. He expects the exports can go up to 220 billion dollars by 2020 which is far away from 1967.

Datamatics Global Services Ltd, is an IT service company started in 1967 from scratch and grown to the present status. For manufacturing sector it is not that easy, it requires push & support for fiscal and other benefits from Government and all others concerned. We need to target GDP at 25% from the manufacturing sector. Commendable economic contribution from manufacturing sector

has been recorded in China, Malaysia compared to developed countries like Germany and Japan.

The investment per employee is significantly lower in SME Sector compared to the large sector. Since one of the main concern of the hour being generation of employment, it is very important to encourage SME sector in all possible ways for sustainable growth.

He concluded by emphasizing the need for Government support for SME and manufacturing sector as was available for the growth of IT Sector which has grown to the current stage. He suggested that Government should introduce a graded income tax structure for the SME Sector. If proper support is available from Government for solving vital issues, SME Sector can grow rapidly.

## Address by Mr. Chandrakant Salunkhe - President, SME Chamber of India



In his introductory address Mr. Salunkhe emphasized the capabilities of SME Sector and suggested that they should be encouraged in all possible ways to grow. Besides timely availability of funds from Banks at affordable interest rates, they should also be encouraged and supported to adopt latest technologies and innovation in order to achieve the 9% growth envisaged by our Hon'ble Prime Minister. He stressed on the need for creating awareness for making global connectivity for business enhancement especially in European countries where opportunities for investment, alliances,

joint ventures and contract manufacturing tie-ups are available in plenty. He assured the support of the Chamber in this regard.



Delegates at the Summit

Address by Mr. Ramesh Iyer - Sr. VP & Head, SME and Wireline Business, Tata Teleservices Ltd



India is a country of SMEs and SMEs contribute significantly to the Indian economy towards GDP, industrial output, employment generation and exports. Being such a vital sector, it is for the industry to succeed, unite, come together and make a mark for themselves and transform themselves, said Mr. Iyer.

Being small has its own advantages. Nobody is born big. In the previous old days, typically the large companies tend to eat the small companies. In today's environment it is no longer so. Being large, does not necessarily mean, you will be the winner. Being small will help you significantly to run faster. Despite a huge contribution towards Indian economy, employment and national development, SMEs are languishing in dark sadly for want of technological assistance, infrastructural assistance, financial

assistance and proper training to meet their developmental needs. Having recognised this need, Tata Teleservices have formed a very special unit only to cater to the needs of small and medium enterprises. We have understood the needs by working with 20,000 SME customers across the country. Tata Teleservices works very closely with industry associations, industry bodies and government bodies to understand the needs of technology solutions and come out with technology solutions that best suits them and help them to transform faster to meet the preset needs. Mr. Iyer said that technology and innovation are absolutely critical for the success of SMEs. If you want to perform, you have to embrace and adopt the latest technology, otherwise you will perish. "Perform or perish" mantra is applicable more to SMEs and the perishability is more in SMEs

because of lack of various forms of support and assistance. It is extremely critical for the SMEs as well as the large companies to co-exist. Citing many success stories he said that "Today's SMEs can be Tomorrow's Big Corporate" with the right approach. He explained about the technology developments taken place during the last decade on internet and mobile communication.

Today SMEs have started adopting suitable technologies and as per him all SMEs should go in for cloud computing. There are many more advantages available and he urged the SMEs should look at their internal needs for technology and training for which he assured all assistance from Tata Teleservices

## Launching of [www.tatab2b.com](http://www.tatab2b.com)



Dr. Subir Gokarn – Deputy Governor, Reserve Bank of India launching the [tatab2b.com](http://www.tatab2b.com) portal for SMEs at the inaugural of the Summit.



## Address by Mr. Sachin Pillai - Group Business Head, Reliance Commercial Finance Ltd



First, the SME entrepreneurs have to scale up their activities in order to grow. This requires greater degree of professionalism in management. Skill enhancement on an ongoing basis is a must. The SMEs also need to recognise the need for greater process orientation. Training therefore becomes a very key issue here. We need institutions that can impart customized and relevant training to SMEs. SMEs should adopt cluster based approach to take advantage of common facilities. There are institutions taking concrete steps in this regard, said Mr. Pillai.

Second important point is to provide financial support to SMEs. While many banks and financial institutions like Reliance have been providing loan of debt

capital, critical equity funding needs to be provided to ensure growth and scalability on a sustainable basis. Angel investors, venture capitalists and private equity players can play a significant role in this, if the business model is highly profitable. The other factor to be considered is the level of governance of an enterprise.

Correctness of accounts, transparency in paying taxes and sharing the relevant information, and financial statements in time and overall ability to build the business relationship on trust on a long term basis is the key to success.

Technology enables SME to access markets for in a very cost effective manner. In a world that is continuously shrinking due to technological advances,

it is imperative to have access to latest technology. However, latest technology at times is very costly. Therefore, it becomes difficult for the SMEs to adopt. The new concept of cloud computing offers exciting opportunities for SMEs. This allows users to access the latest technology without incurring huge expenditure. The advantage that comes to the SMEs is that the users can take what they need and pay on a "Pay per use" basis and the collateral benefit that arises out of this is usage of high technology is good corporate governance and transparency in record keeping.

Reliance Commercial Financial Ltd. is committed to partner with SMEs in providing suitable solutions to them.



## PLENARY SESSION – I ECONOMIC GROWTH OF INDIA – “ROLE OF SMES”



From (L to R) **Mr. Rajeev Saxena** – Business Head -ECC, HCL Infosystems Ltd, **Mr. Ramesh Iyer** – Sr VP & Head - SME and Wireline Business - Tata Teleservices Ltd, **Mr. Chandrakant Salunkhe** – President, SME Chamber of India, **Mr. A. Ramesh Kumar** – MD & CEO, Asia Pragati Capfin Pvt. Ltd and VP, SME Chamber of India, **Mr. R Seetharaman** – CEO, Doha Bank Group, Qatar, **Mr Shashi Ravulapaty** – CTO, Reliance Commercial Finance and **Mr. Souvik Sengupta** - Business Head, SME Loans, Reliance Commercial Finance during plenary session I on “Economic Growth of India -Role of Indian SMEs”

### Mr. A. Ramesh Kumar - MD & CEO, Asia Pragati Capfin Pvt. Ltd and VP, SME Chamber of India addressing the delegates on “Role of SMEs for Nation Growth”



While speaking on the topic 'Role of SMEs for Nation Growth' Mr. Ramesh Kumar observed that SMEs with high turn over and adaptability play a major role in removing regional and sectoral

imbalances in the economy. SMEs also play an essential role as sub-contractors to large companies.

He also mentioned about various disadvantages faced by the SMEs due to market failure biases caused against SMEs.

He mentioned that small size creates cost disadvantages for SMEs because they do not have the same capacity to influence the environment as large firms.

For increasing their global competitiveness he suggested that SMEs should try to get appropriate returns from their knowledge base. Wherever possible, they should also invest in R & D

activities. SMEs should go in for information technology strategy, niche strategy, network strategy and cluster strategy.

He concluded by emphasising the key issues needed to be addressed to facilitate the growth of SMEs such as elimination of expensive and cumbersome regulatory requirements, permitting e-registration, e-filing of returns, provide adequate infrastructure, facilitate information access, monitoring SME performance, impact of policy measures, acquisition of right technology, brand building, ensuring success of SME Exchange, create sources of risk capital such as VCs/PE funds

### Mr. Shashi Ravulapaty - CTO, Reliance Commercial Finance addressing the delegates



Mr. Ravulapaty spoke and presented on “IT- a Partner in Business Growth”. He explained about Strategic Planning, Budgeting & Planning, People Skills, Operational Efficiency, Execution, Process Re-engineering, Monitoring & Control, Dashboards, Cost Efficiency, Business Reach, Communication and Innovation. He also explained about IT Capabilities at Reliance Commercial such as, Finance and business partnership

approach, Contact Centre, CRM, Marketing – Campaign Management, Lead Management, Customer Service, Self Service Portals, Online access to customer account information, Financial Calculators and Online Loan Application (with document upload), emerging technologies, cloud services, best practices, cost saving, mobile technology, barcode and documents management.

### Mr. R Seetharaman, CEO, Doha Bank Group, Qatar addressing the delegates on "SMEs and Global Competitiveness: Strategies for Survival and Growth"

Speaking on the occasion Mr. Seetharaman gave his outlook on Global Economy and Indian Economy. He stated "The recent issues in U.S and Europe can impact the global growth in the short to medium term. Measures need to be taken at various levels to ensure revival of Global Economy and Risk of Global recession prevails. India's growth is expected to be at 8-9% in 2011-12. In July 2011 the Reserve Bank of India raised interest rates on account of higher inflation which has currently exceeded 9%".

Mr. Seetharaman gave his view on role of small and medium-sized enterprises (SMEs) on economies. He said "as a central pillar in the world economy, SMEs play a critical role in innovation, advancement and sustainable development worldwide. In today's increasingly globalised world, SMEs around the world have to unprecedentedly compete globally. They are both the most dynamic and the most vulnerable constituent in the global economy. "The 21st century belongs to the SMEs", observed Mr. Seetharaman.

Mr. Seetharaman highlighted the relevance of SMEs on national and Global competitiveness. "National level Competitiveness is considered by all countries to be a prerequisite for maintaining high levels of income and employment. When a nation loses its competitiveness, this is reflected in its deteriorating welfare conditions rather than elimination from the market. We see today many countries struggling to manage its competitiveness and thereby run the risk of deteriorating welfare conditions of its people. One of the most important indicators of competitiveness is export competitiveness. If countries are to strengthen competitiveness, they will have to support programmes that are necessary for strengthening productive capacity at small- and medium-sized enterprises level. SME promotion should be one of the key areas for governments to remove unemployment issues.

Mr. Seetharaman gave his insights on areas where SMEs can improve its competitiveness. He stated that "Public-Private dialogues, access to Business

development services (BDS), access to finance and technology are the key areas which SMEs need to focus. The quality of public-private working relationship will emerge as a competitive advantage for a country. In its own right BDS interventions are specifically aimed at helping small enterprises to overcome market imperfections and inadequate access to technology, as well as to operate more competitively and with greater efficiency in domestic and global markets. Traditionally SMEs had difficulty in obtaining formal credit or equity.

In recent years leading commercial banks in developed countries have been particularly successful in servicing the SME market. Technology development can be done mainly through clustering and inter-firm cooperation or business linkages."

Mr. Seetharaman gave his outlook on Global and regional trends in SMEs. He stated "Small and Medium Enterprises (SMEs) are expected to contribute 22 % to India's Gross Domestic Product (GDP) by 2012. In Australia there are over 1.2 million SMEs representing over 96% of all business which contribute 33% of GDP. SMEs act as a Foundation of Japanese Industry accounting for over 99% of all businesses in Japan. On an average 80% of the GCC region's business and employment market is made up of Small and Medium enterprises (SMEs). Bank loans to SMEs accounted for only 2 percent of total lending in Gulf Arab countries. SMEs in Saudi Arabia represent almost 93 percent of total enterprises and account for about 24.7 percent of total employment. Kuwait and Saudi Arabia are planning to establish authorities to promote SMEs".

Mr. Seetharaman mentioned that "Enterprise Qatar, an early initiative linked to QNV 2030, will support small and medium-sized enterprises for diversification. It will direct its energy towards knowledge-intensive businesses, focusing particularly on developing entrepreneurial skills among young Qatari men and women. It will be the SME sector's representative within



Government and ensure that key issues are heard and supported."

Mr. Seetharaman highlighted the current trends in Qatar for SMEs lending. He stated "Qatari banks face unique challenges on SMEs in relation to collaterals and for financing start up SMEs. Qatar development Bank has actively supported SMEs both through direct and indirect lending. Qatari banks have tied up with Qatar development bank to promote "Al Dhammeen" a Credit Guarantee program introduced by Qatar Development Bank (QDB) to finance SMEs in Qatar."

Mr. Seetharaman highlighted the current scenario for long term fund raising by SMEs. Capital markets are providing platform to enable SME players to raise capital.

In his concluding remarks, Mr. Seetharaman said that "In the coming years SMEs will play a significant role to improve national and global competitiveness

#### Memorandum of Understanding Between SME Chamber of India and Doha Bank



## Mr. Souvik Sengupta - Business Head, SME Loans, Reliance Commercial Finance addressing the delegates on "Role of Reliance Capital for the Growth of SMEs"



With an elaborate presentation Mr. Sengupta spoke on the topic "Role of Reliance Capital for the Growth of SME".

RCF offers to SMEs many investment and funding options. .

Further he explained about the challenges in investment and funding for SMEs such as poor profitability, lack of access to formal capital markets and institutions, relatively opaque accounting principles, higher reliance on alternative funds.

There are no effective industry wide platforms for data sharing on companies due to legal and regulatory constraints.

He also explained about Reliance Capital Business Mix such as asset management, insurance, broking and distribution, commercial finance and investments. For SMEs asset based financing for commercial vehicles, commercial equipment, loan against securities, inventory funding, lease rental discounting, operating lease solutions, loans against property etc.

He also discussed about Supply Chain and Non Fund based facilities like working capital gap funding, bill discounting, debt syndication, escrow, letter of credit and bank guarantees.

The investment and funding options available at the Reliance Finance Commercial Ltd. was explained in detail, which included term loan products, saving and insurance products, reliance life and general insurance, working capital and non-fund based products, WC demand loan, bill discounting, factoring, bank guarantee, letter of credit, equity participation through PE/VC through Reliance Securities and advisory services.

Mr. Souvik encouraged the SMEs to avail of the various financial products and assured all support and assistance for obtaining the same.

## Mr. Rajeev Saxena - Business Head - ECC, HCL Infosystems Ltd addressing the delegates on "Importance of Technology to improve Leadership quality in SMEs"



Speaking on the "Importance of Technology to improve Leadership quality in SMEs" Mr. Saxena observed that SME

spending on IT is 30% of India's total IT expenditure. According to him, main challenges being faced by SMEs are Lack of access to affordable & adequate finance, low investment in R&D, non-availability of skilled labour, no economies of scale, highly fragmented structure and lack of access to technology and product innovation.

He stressed that the problems with SMEs are many such as lack of understanding about availability of technology and its application to the business, limited internal ability to develop and manage technology, perceived high cost of adoption and management of technology.

On the supply side, there is lack of consolidated directory of technology,

support infrastructure and services available.

He explained about wide SME market for IT through quality and quantify of information exposure, reduce costs, integrating supply chains, Emails/e-Fax - Effective internal & external communication - Increased Productivity and Quick Reaction to Changing Environment and relevant information flow through Internet.

He also explained about Evolution in ICT-adoption and increased complexity in business networking through the presentation. Mr. Saxena elaborated in detail how HCL has been geared up to meet the IT needs of SMEs by introducing their various products



## PLENARY SESSION – II SME SECTOR – CHALLENGES AND OPPORTUNITIES



From (L to R) **Mr. A. Ramesh Kumar** – MD & CEO, Asia Pragati Capfin Pvt. Ltd and VP, SME Chamber of India, **Mr. Robert Marc Clement** – Vice Chancellor, University of Wales, U.K, **Mr. Robin Banerjee** – Chief Financial Officer, Suzlon Energy Ltd, **Mr. Chandrakant Salunkhe** – President, SME Chamber of India, **Mr. Girish Bhagat** – Director - India Nivesh Ltd., **Mr. Anand Desai** – Managing Partner, DSK Legal and **Mr. SRRao** – President, Global Procurement Consultants Limited during panel discussion at the Summit

### Mr. Robin Banerjee - Chief Financial Officer, Suzlon Energy Ltd addressing the delegates on “Transforming SMEs into Large Companies – Strategy and Implementation”



While speaking on the topic “transforming SMEs into large companies – Strategy and Implementation” Mr. Banerjee said that SMEs have the capability to function very well and become a part of world. Quoting Suzlon Energy - his company and of Infosys example, Mr. Banerjee said that every large company of today was a small company and every small company has the potential to be a large company in future.

The most important challenge is lack of money. If the SMEs are able to get a little more money things would have been significantly different, observed Mr. Banerjee. The opportunity in India is priority lending available in the country mainly the banks which are now trying to understand the SMEs and coming forward to support them financially and SMEs should take advantage of the 40% priority

sector lending facilities available from the banks. He stressed on the importance of rating of SMEs from a rating agency which helps SMEs to improve their credit worthiness. Hence SMEs should go in for rating of their enterprises from reputed rating agencies so that the Banks can easily finance their various needs. In this regard he suggested to the Chamber to have an active participation with the concerned Government agencies for making available financial support to the needy SMEs from banks as well as equity funding etc.

While biggest challenge is finance, the second challenge faced by the SMEs is manpower. SMEs that employ one or two people find it difficult to retain the manpower. However if an enterprise can retain the talented people, it can bring about success in every aspect of operation. Reason behind most of the great successful organisation is that they were able to retain their best manpower. For this purpose there is need to motivate employees and make them feel as if they are part of the organisation.

The most important and extremely critical challenge is technology. Most of the success stories are indebted to the timely adoption of technology. If the above challenges of money, manpower and technology are accomplished, success is certain for any organisation, said Mr.

Banerjee. There are two methods of getting technology; one is buying a small technology oriented company and two grow the technology in house with the help of R&D and innovation.

There are of course many other impediments the SMEs face today such as Governmental policies, branding, marketing etc. But if the three important challenges i.e. Finance, Manpower and Technology are distinguished and dealt with in the right earnest, SMEs can and have the potential to become tomorrow’s large companies, said Mr. Banerjee.



Mr. Girish Bhagat - Director - India Nivesh Ltd. addressing the delegates on “Acquisition of Foreign companies for their Technologies and access to global markets - availability of acquisition funding”

Mr. S R Rao - President, Global Procurement Consultants Limited, addressing the delegates on “International Competitiveness and overall Procurement Governance”



Mr. Rao spoke and gave a presentation on the topic “International Competitiveness and Overall Procurement Governance”

About SMEs and Globalisation, he mentioned that greater integration of the world economy has increasingly drawn Small and Medium Enterprises (SMEs) into global value chains, allowing them to access international markets which have now become an important part of business strategy for many outward-looking SMEs. He said that a host of business opportunities are available in larger and new markets. Also high growth firms realize the potential of SMEs and utilise their technological and manufacturing capabilities.

Globalization can also pose challenges and present opportunities to SMEs and increase their exposure to international competition.

He also mentioned that SMEs contribute around 40% of India's exports; exports have increased at a CAGR of 18.6. Key export items from the SMEs are auto components, chemicals, tools and machinery, gems & jewellery, leather, plastic goods, handicrafts, etc. India has been taking continued measures to

encourage the future growth of these Enterprises.

Mr. Rao mentioned that achieving sustainable development and growth of SMEs would entail examination of several issues/challenges including access to adequate financing, access to technology, managerial capabilities, productivity, regulatory issues, brand value and good Governance. SMEs must develop strategies to address these issues. He also elaborated various financing programmes of banks with respect to export credit, import credit and loans for exporting units.

He also explained various SME value based programmes of Exim Bank which include first ever Export Marketing Fund (EMF) from World Bank, the first ever Agency Credit Line for the SME sector from IFC, 'Clusters of Excellence' programme to assist small and medium sized Indian software exporting companies in achieving international quality standards, non-recourse, off-balance sheet financing for SME exporters which often serves as a market entry mechanism. Lines of credit are also extended by Exim Bank to various

countries for imports from India. He explained about export lines of credit (LOC) extended to overseas financial institutions, regional development banks and foreign governments and their agencies and Buyers' Credits (BC) to foreign corporates. He said that LOCs may also be extended at the behest of the Government, LOCs serve as a market entry mechanism for exporters and provide a safe mode of non-recourse financing option and LOCs/BCs are particularly relevant for SME exporters as the payment risk is borne by the Bank.

Speaking on Grassroots Business Initiatives he mentioned about the importance of linking rural industries to global market by creation of Export Capability in Grassroots Enterprises, Export Marketing Services, Capacity building through training and poverty reduction through export linkage.

Speaking on Enterprise Management Development Service and competency, he explained about comprehensive assistance such as pre investment advisory services, finance through debt and equity, provision of analytical information, advise to enterprises on due diligence etc.



### Mr. Robert Marc Clement, Vice Chancellor, University of Wales, U.K, addressing the delegates on “Leadership opportunities for SMEs through Innovations”

At the outset, Prof Clement gave an overview of Wales and its economy from 19th to 21st Century such as, 19th Century it was known as Global industrial powerhouse with coal, iron, steel and copper being its major exports; 1960s, 70s and 80s witnessed the collapse of coal industry and country moved to manufacturing industry and 21st Century witnessed the erosion of manufacturing industry with new focus on knowledge economy.

Further he explained about the knowledge economy and the critical role being played by Universities and Higher Education in Wales. They have taken new initiatives, combining agenda for teaching, research and linking with global partners. The global academic projects of the University comprises of validation,

capacity building, research, industrial liaison, Prince of Wales innovation scholarships and visiting innovators programme.

He also mentioned about the importance of Academic – Industrial Engagement and why academia thinks businesses want to work with them and why does knowledge business really want to work with academia for access to young graduate talents, access to resources and access to knowledge networks.

Prof. Clement elaborated various academic programmes of the University of Wales to assist companies to develop innovative products and services across different sectors.

He welcomed the proposal of University of Wales and SME Chamber of India planning



collaboration in the field of Knowledge Economy to empower SMEs

### Mr. Anand Desai, Managing Partner, DSK Legal addressing the delegates on “Good Governance and Business ethics for better growth”

Mr. Desai spoke on the topic “**Good Governance and Business Ethics for better growth.**

He explained about various procedures and rules to be followed while going in for due diligence. Mr. Desai mentioned that there is limitation for a legal firm on this aspect. Being not investigators, the legal firm can only look at what has been shown to them. The key question often asked is how robust the system and the processes are in an enterprise. He explained how management can look in terms of the organisational structure and which are the areas in which the leakage could easily take place. He said despite proper care, the experienced investors often lose money though they invest to capture money.

As regards good governance for listed companies, he stressed on Clause 49 of

the Listing Agreement which requires independent directors etc., In case of SMEs, he explained that the Clause 49 is about transparency, having proper systems and decision making process which are highly important. SMEs being single decision making companies in most cases, it is difficult to have these systems. However he stressed on the necessity of all these systems for better growth instead of taking decision single handedly.

About business ethics Mr. Desai observed that entrepreneurs and investors have always followed the practice of simply ignoring the business ethics and find a quick fix solution to the problems. However, in recent times, investors have started taking critical view of the company and have chosen to invest only in those



where they can have a clear picture of systems and processes.



## PLENARY SESSION – III BUSINESS AND INVESTMENT OPPORTUNITIES FOR INDIAN SMEs



From (L to R) **Mr. A. Ramesh Kumar** – MD & CEO, Asia Pragati Capfin Pvt. Ltd and VP, SME Chamber of India, **Mr. Gurdeep Singh** – Vice Chairman, Northern Region, SME Chamber of India, **Mr. Chandrakant Salunkhe** – President, SME Chamber of India, **Mr. Ravindra Kumar** – Director, Standard Bank Plc, **Mr. Bhuvan Bhushan** – Associate Vice President- Corporate Sales, Lodha Group, **Dato' Hafsah Hashim** – Chief Executive Officer, SME Corp. Malaysia, **Mr. Prashant Nagre** – Chief Operating Officer (COO), Fermenta Biotech Ltd, **Ms. Aslesha Gowariker** – Partner, Desai & Diwanji and **Mr. Rajeev Krishnan** – President and Chief Operating Officer, SBI Capital Markets Ltd. during panel discussion at the Summit

### Dato' Hafsah Hashim - Chief Executive Officer, SME Corp. Malaysia, addressing the delegates on “Moving up the Value Chain of MSMEs”



With an informative presentation she spoke on the topic “**Moving up the Value Chain of SMEs**”. She elaborated in detail about SME Development in Malaysia and Business Opportunities for Indian SMEs. While dealing with opportunities arising from economic transformation and trade liberalisation she mentioned that SMEs are the backbone of the economy and important generator of employment and growth.

National SME Development Council of Malaysia is a high level body to chart SME policy direction and it has been established in 2004 and chaired by the Prime Minister assisted by 15 other

Ministers. SME Corp Malaysia is the central agency for coordination, policy, advisory and business development with the responsibilities of formulating broad policies and provides direction for comprehensive development of SMEs across all sectors, overseas coordination and ensures effectiveness in policy implementation. She elaborated a structured approach used in Malaysia in SME Development since 2005 to promote development of competitive and resilient SMEs in all sectors in order to increase SME contribution to the economy.

She also explained about the 12 National Key Economic Areas which offers business opportunities especially in high value activities i.e. wholesale and retail, tourism, business services, oil and gas, electrical, and electronics, education and health, ICT, Palm Oil, Agriculture, Greater KL and Financial Services. Trade Agreement with various countries also paved the way for more investments in various sectors. The trade agreements cover a broad scope including liberalisation of services sector.

She mentioned that Malaysia is an attractive investment destination for Indian companies and offers various tax incentives. There are also programmes to assist capable and innovative SMEs where Indian companies can start joint ventures with their Malaysian partners. She also explained about SME Innovation Award introduced in 2010 for motivating

SMEs with cash awards. Business environment in Malaysia also facilitates greater investment and collaboration between the two countries. She also explained about various Business Prospects between Malaysia and India – Greenfield investments, joint ventures, research and development (R&D), Technology Exchange, Automotive, Halal, Solar, Oil and Gas, ICT, Bio-gas, Education, Franchising, Medical, Study and Training, exchange of best practices and exchanges, workshops and exhibitions.



**Mr. Prashant Nagre** - Chief Operating Officer (COO), Fermenta Biotech Ltd addressing the delegates on “**Initiatives for unlocking the potential of Indian Entrepreneurship**”



### Ms. Aslesha Gowariker – Partner, Desai & Diwanji, addressing the delegates on “Aspects of FDI in SMEs”

Ms. Gowariker spoke on the topic “**Aspects of FDI in SMEs**” with an informative presentation on the various aspects of FDI. She emphasized the role of SMEs in furthering the objective of equitable and inclusive growth and said that the socio-economic policies adopted by India since the Industries (Development and Regulation) Act, 1951 have laid stress on SMEs as a means to improve the country's economic conditions.

Further, she explained the various routes for investment in India.

As per Foreign Investment in India (FDI) rules, Companies incorporated under the Companies Act, 1956 can issue capital against FDI subject to sectoral caps and other provisions set out in the FDI/ RBI Regulations, Investment by contribution to capital of a firm or proprietorship concern or any association of persons in India can be made only through RBI approval, which is given in consultation with the Government of India.

Where approval is required for foreign direct investment, applications are required to be made to the FIPB, which is part of the Ministry of Finance.

The prohibited sectors are Retail Trading (except single branded product retailing), Gambling & Betting, Lottery Business, Trading in Transferable Development Rights, Real estate business or construction of farm houses, manufacturing cigars, cheroots and cigarettes of tobacco or tobacco substitutes, Nidhi Company, Business of chit fund, Activities/ sectors not opened to private sector investment including Atomic Energy and Railway Transport (other than mass rapid transport systems).

FIPB approval is required for foreign investments in certain cases, primarily to protect the interests of domestic entrepreneurs. For example, Foreign investments in the tea plantation sector, Foreign investments in mining and mineral separation of titanium bearing minerals and ores, its value addition and integrated activities, foreign investments in the defence industry and foreign investments in the broadcasting sector, courier services for carrying packages/parcels, downstream investment- foreign investments in investing companies i.e. Indian companies holding only investments in other Indian companies, directly or indirectly, other than for trading of such holdings / securities require prior government / FIPB approval, all proposals falling outside the notified sectoral caps / policies or sectors in which foreign investments are not permitted.

Foreign investments in certain sectors are conditional upon requirements such as minimum capitalization, limits on foreign shareholding, etc. A few such sectors and conditions are -Telecom – 74% subject to FIPB approval above 49%, Insurance – 26%, Development of townships, housing, built-up infrastructure and construction-development projects – 100% subject to minimum capitalization and developed area norms, certain types of non-banking financial institutions – 100% through automatic route subject to minimum capitalization norms, airports – 100% for green field projects and 100% for existing projects subject to FIPB approval above 74%, airlines (Scheduled Air Transport Service) – 49%, foreign investment can be accepted by Indian Companies against



issue of following types of instruments:

- Equity shares
- Compulsorily and mandatorily convertible preference shares
- Compulsorily and mandatorily convertible debentures
- Warrants issued subject to prior government approval

The type of instruments is

- Ratio to equity shares must be fixed upfront.
- Inward remittance received by Indian Company vide issuance of depository receipts such as ADRs, GDRs and FCCBs is counted towards FDI.
- Premium paid by the Investor on FDI related securities is calculated towards minimum capitalization.
- All other instruments i.e. non-convertible, optionally convertible or partially convertible are considered as debt and are governed by norms applicable for ECBs.

### Mr. Bhuvan Bhushan - Associate Vice President- Corporate Sales, Lodha Group, addressing the delegates on “Present and Future Projects of Lodha Group”

Mr. Bhushan explained the volume of absorption in various cities in India, focused approach plus commercial to excellence. They have the Largest and cleanest land reserves of 4171 acres in Mumbai.

36 Individual RE Brands: 38 projects, 10.7 Mn. sqft area delivered with 2.95 Mn sqft in FY'11 – almost 4 times increase over last year and 30 million sq. ft. under development, over 2,50,000 prospective home buyers serviced, over 16,000 existing customers and over 1900 happy residents. They are also redefining luxury in real estate.



## Mr. Rajeev Krishnan - President and Chief Operating Officer, SBI Capital Markets Ltd addressing the delegates on "Global Financial Crisis and Slow Down – Impact on SMEs"



Mr. Rajeev Krishnan spoke on the topic "Global Financial Crisis and Slow Down – Impact on SMEs" with an elaborate presentation:

Mr. Krishnan said that since 2008 Global financial crisis had and continues to have profound effect across all sector and economies. Indian Economic growth decelerated in 2008-09 to 6.7 percent. This represented a decline of 2.1 percent from the average growth rate of 8.8 percent in the previous five years (2003-04 to 2007-08).

SMEs have been particularly affected by the crisis because they are of small size

and with weaker financial structures. Demand fell and payment related issues rose thereby posing financial and operational risks. Hence, SMEs find it relatively difficult to survive the difficult economic situation. He explained the impact of recession of SMEs loss in export orders with facts and figures.

The challenges faced during recession were, access to financing and tightening of credit terms, drastic drop in demand for goods and services, difficult to downsize as they were already small, less revenue due to lack of diversification, weak capital structures, high dependence on credit, loss of customers and job losses said Mr. Krishnan. These reasons forced many SMEs to shut operations.

Government response to assist SMEs were includes:- interest rates cut for micro-enterprises by PSU banks, RBI announcing a refinance facility of Rs. 7000 crore for SIDBI to support incremental lending, either directly to MSMEs or indirectly via banks, NBFCs and SFCs. State Bank of India restructured 41,000 accounts in its small and medium enterprise (SME) advances portfolio in 2009. Textile, garments, automotive, gems and jewellery were the

hardest hit segment in the SME loan portfolio. Moratorium period was extended in respect of loans availed by MSMEs; Pre and post shipment export credit was provided to various SMEs; provided incremental lending, either directly to MSMEs or indirectly via banks, NBFCs and SFCs, Extension of credit guarantee cover for Micro and Small enterprises on loans was extended from Rs 50 lakh to Rs 1 crore with a guarantee cover of 50% on the monetary side, the RBI pumped in sufficient liquidity into the banking system to enable bank credit to meet the expanded requirements of the SME sector and general economy.

Mr. Krishnan concluded by saying that the current debt crisis in some European Union member states will have a negative impact on Indian exports and especially SMEs. At least 27 percent of India's trade is with Europe and the crisis will impact India's export to the region. Standard & Poor's has downgraded the United States government's credit rating from AAA to AA+. US ranks as the top destination for Indian exporters and US downgrade, along with Euro crisis and tsunami ravaged Japan could pose problems for Indian SMEs especially export oriented.

## Mr. Ravindra Kumar, Director, Standard Bank Plc, addressing the delegates on "Economic Growth and Transformation of India – Position of SMEs"



Mr. Ravindra Kumar spoke on the topic

"Economic Growth and Transformation of India- position of SMEs".

Today the focus has shifted to PIGS –Portugal, Ireland, Greece and Spain. The crisis in PIGS economy is going to have a serious impact on the currency exchanges around the world. He mentioned that the crisis in US that lasted for 15-20 months should have adversely affected the dollar. However it continued to remain strong. He highlighted the key reason for this as PIGS economy which has dragged down the Europe and the EURO is going to be very volatile for next 15 months and Yen has also become weak due to Tsunami and its consequences.

Yuan is considered to be mysterious as China has not revealed real state of its economy to the world and the global

economy is expecting it to bring lots of surprises some of which will be very unpleasant to the world economy. However he said that one hand Euro, Yuan, Yen and UK Pound will have turbulent times while the US Dollar will continue to remain strong.

Mr. Ravindra Kumar observed that as World economies continue to get integrated, there will be adverse impact on Indian rupees. He stressed that such a situation creates biggest risk and is very crucial to ensure that proper care and adequate measures are taken during such turbulent times.

He offered to provide Standard Bank's as well as SME Chamber of India's assistance in this regard.

## SME INNOVATION AWARDS & SME EXCELLENCE AWARDS

Dr. Subir Gokarn – Deputy Governor, Reserve Bank of India presenting  
National Level “SME Innovation Awards & SME Excellence Awards”



**Mr. Govind Rammurthy**  
CEO & MD, Microworld Software  
Services Pvt. Ltd. SME Innovation Award  
2011 (Service Sector)



**Mr. Dewang Neralla**  
Director, Atom Technologies Ltd.  
SME Innovation Award 2011  
(Service Sector)



**Mr. Nishith R. Shah**  
Chairman, Prasol Chemicals Ltd.  
SME Innovation Award 2011  
(Manufacturing sector)



**Ms. Shilpa Joshi**  
Director, Green Build Products (I) Pvt.  
Ltd. SME Innovation Award 2011  
(Manufacturing sector)



**Mr. Mehl Panchal**  
Director, Filter Concept Pvt. Ltd  
SME Innovation Award 2011  
(Manufacturing sector)



**Mr. Makrand Appalwar**  
CEO, Emmbi Polyarns Limited  
SME Excellence Award 2011  
(Manufacturing sector)



**Mr. Anil Jadhav**  
Executive Director, Yashraj Ethanoll  
Processing Pvt. Ltd. SME Excellence  
Award 2011 (Manufacturing Sector)



**Mr. Uday Adhikari**  
Managing Director, Al-Aziz Plastics Pvt.  
Ltd. SME Excellence Award 2011  
(Manufacturing sector)



**Mr. Ashish Arora**  
Managing Director, HR Anexi Private Ltd.  
SME Excellence Award 2011  
(Service Sector)



**Mr. Ajit Shah**  
Executive Consultant, K-Connections  
SME Chamber of India Appreciation  
Award for Growth of SMEs



**Ms. Kavita Shukla**  
MD, Euclid Infotech Pvt. Ltd.  
SME Excellence Award 2011  
(Service Sector)



Delegates at the Award Function

# Solar Collectors for Low Temperature Applications

By

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## Abstract

Attractive paybacks can be realized while tapping solar energy to meet the low temperature heating needs, at or below 100°C. Two patented low cost light weight roof mountable solar collectors developed at Heat Pump Laboratory, IIT Bombay are described here. Features and economics of a heat pipe based evacuated glass tube solar collector, HP\_SC, is presented which delivers efficiency close to 60% based on global radiation, while generating steam at 1 bar and 100°C. A plastic solar air heater, PSAH, capable of heating air through a temperature rise of 30 to 70°C, while delivering heat up to 65% is also included.

## 1. Introduction

A large part of industrial, commercial and residential energy need consists of heating at low temperatures, at or below 100°C. Some of the applications are washing, pasteurizing, bleaching, dyeing, pickling, drying and space heating. Fossil fuels or electricity have been traditionally used for these applications. It is desirable to reduce use of fossil fuels for this purpose due to their short supply, price fluctuations and concerns of pollution associated with exhaust emissions. Solar energy can be a good clean alternate source of energy for above applications. High cost and weight, maintenance including need for adjustment of tracking mechanism and need for suitable installation space are some of the main deterrents for wide spread use of solar energy. Novel Patented solar collectors developed at Heat Pump Laboratory at IIT Bombay, HPL\_IITB address above issues in an innovative way. Two of these solar collectors, which promise good techno-economic viability, are described in this article: heat pipe based evacuated glass tube solar collector, HP\_SC, and plastic solar air heater, PSAH. Test results of these collectors are presented and their payback period is also calculated in this paper.

## 2. Heat Pipe based Evacuated Glass Tube Solar Collector, HP\_SC

Double wall evacuated glass tube, EGT for solar radiation collection is a mass manufactured commercial product available at economical rates. The HP\_SC uses three target EGTs (47 mm OD x 1.5 m L) for absorption of solar radiation. In addition to being economical, they have advantage of vacuum insulation and passive tracking of sun. Heat pipe based solar collectors have advantage of quick starting due to lower thermal mass and lower pressure drop in heat receiving fluid circuit. Conventional gravity fed heat pipes used in solar collectors are manufactured, evacuated and charged individually. They are combined with heat transfer fins in case of double wall EGT and with flat absorber plate in case of single wall EGT for heat transfer from hot surface of EGT to heat pipe. Heat pipes are generally costly due to multi-step manufacturing procedure, evacuation and charging. The heat pipe working fluid evaporates taking heat from hot surface of EGT. The heat pipes are thermally connected with heat receiving fluid manifold using female adapters or copper blocks attached to their condenser section. Addition of these components increases thermal mass and cost of solar collector. In addition to this, stagnation zones may be created in the manifold, which make them difficult to clean. The heat pipes of HP\_SC developed at HPL\_IITB (Indian Patent Application #1606/MUM/2011) can be evacuated and charged simultaneously. Modular fins are used to transfer heat from hot surface of EGT to heat pipe. Modular construction helps in reducing temperature of absorber surface. Light weight non-tracking collector can be mounted on existing roof or integrated with it in new construction.

[http://www.carbonsmart.us/pdf/Apricus\\_components.pdf](http://www.carbonsmart.us/pdf/Apricus_components.pdf)

[http://www.sundasolar.com/product\\_seido10\\_series\\_collector.html](http://www.sundasolar.com/product_seido10_series_collector.html)

<http://www.solarcollectorinc.com/admin/main/upload/2010092109560149005.pdf>

Takeuchi and Mikiya, 1987, Winston, 2008 and Zhang et al, 2006



Figure 1: HP\_SC Arrays Installed on HPL\_IITB Terrace

### Salient features of HP\_SC

- Low cost of collector: estimated mass production cost is ₹ 3,650/kWh at ₹ 12,000/m<sup>2</sup> and 3.32 kWh/m<sup>2</sup>; this cost could reduce by another 10 to 15% if production volume increase to millions of m<sup>2</sup> per year
- Indigenously developed, easy to fabricate, low cost heat pipes which can be serviced on site, if required
- Modular fins for heat transfer inside EGT, helps reducing absorber temperature resulting in higher efficiency of collector
- Compact manifold helps reduce thermal mass and losses
- Easy to clean predominantly straight fluid tube passages.

### 3. Performance of HP\_SC

Performance tests have been conducted for generation of saturated steam at 1 bar and 100°C and for water heating. Three module HP\_SC with total absorber area of 10.5 m<sup>2</sup>, seen in Figure 1 was used for generation of saturated steam and heating water for 9 h measurement period. The results of one of the tests are shown in figures 2 and 3.

Figure 2 and 3 show variation of global radiation,  $I_g$ , heat output of the solar collectors per square meter of absorber area,  $Q_{sc,m^2}$ , inlet temperature of water  $t_{w,i}$ , outlet temperature of water or steam,  $t_{w,o}$ , steam generation rate per square meter absorber area,  $mf_{st,m^2}$  and efficiency of the collectors based on absorber area of the collectors  $h_{sc}$ . Data points are averaged over half hour periods, starting from 8:30 hrs and ending at 17:30 hrs, 9 h period. The collector is fixed and near horizontal ( $b=0^\circ$ ).



Table 1: Results of Testing of HP\_SC for Steam Generation in April, 2011

| Time                   | T <sub>in</sub> | T <sub>out</sub> | Insolation |          | Inlet     |           | Outlet    |           | Performance |          |          |          |          |           |          |                           |          |                           |          |                        |
|------------------------|-----------------|------------------|------------|----------|-----------|-----------|-----------|-----------|-------------|----------|----------|----------|----------|-----------|----------|---------------------------|----------|---------------------------|----------|------------------------|
|                        |                 |                  | $I_g$      | $Q_{sc}$ | $t_{w,i}$ | $t_{w,o}$ | $t_{w,i}$ | $t_{w,o}$ | $t_{sc}$    | $t_{sc}$ | $t_{sc}$ | $t_{sc}$ | $t_{sc}$ | $t_{sc}$  | $t_{sc}$ | $t_{sc}$                  | $t_{sc}$ | $t_{sc}$                  | $t_{sc}$ |                        |
| <b>Measured Values</b> |                 |                  |            |          |           |           |           |           |             |          |          |          |          |           |          |                           |          |                           |          |                        |
| 08:30                  | 09:00           |                  | 0.372      | 34.8     | 9.6       | 72.1      | 0.0       | 9.6       | 0.00        | 37.3     | 3.91     | 156      | 0.42     | 0.00      | 0.42     | 0.04                      | 0.00     | 10.6                      |          |                        |
| 09:00                  | 09:30           |                  | 0.456      | 38.0     | 9.6       | 99.5      | 1.0       | 8.6       | 0.10        | 61.5     | 4.79     | 493      | 0.69     | 0.63      | 1.31     | 0.13                      | 0.10     | 27.4                      |          |                        |
| 09:30                  | 10:00           |                  | 0.570      | 46.4     | 31.5      | 99.8      | 5.3       | 26.2      | 0.17        | 53.4     | 5.99     | 602      | 1.95     | 3.31      | 5.27     | 0.50                      | 0.50     | 87.9                      |          |                        |
| 10:00                  | 10:30           |                  | 0.665      | 73.7     | 31.5      | 100.2     | 5.3       | 26.2      | 0.17        | 26.4     | 6.99     | 489      | 0.97     | 3.31      | 4.28     | 0.41                      | 0.50     | 61.2                      |          |                        |
| 10:30                  | 11:00           |                  | 0.738      | 75.1     | 31.5      | 100.3     | 5.3       | 26.2      | 0.17        | 25.2     | 7.76     | 484      | 0.92     | 3.31      | 4.23     | 0.40                      | 0.50     | 54.6                      |          |                        |
| 11:00                  | 11:30           |                  | 0.788      | 61.8     | 31.5      | 100.4     | 6.7       | 24.8      | 0.21        | 38.6     | 8.28     | 641      | 1.41     | 4.19      | 5.60     | 0.53                      | 0.63     | 67.6                      |          |                        |
| 11:30                  | 12:00           |                  | 0.824      | 65.2     | 31.5      | 100.3     | 5.3       | 26.2      | 0.17        | 35.2     | 8.66     | 526      | 1.29     | 3.31      | 4.60     | 0.44                      | 0.50     | 53.1                      |          |                        |
| 12:00                  | 12:30           |                  | 0.848      | 67.2     | 31.5      | 100.3     | 5.3       | 26.2      | 0.17        | 33.1     | 8.91     | 517      | 1.21     | 3.31      | 4.52     | 0.43                      | 0.50     | 50.8                      |          |                        |
| Solar noon - 12:39 hrs |                 |                  |            |          |           |           |           |           |             |          |          |          |          |           |          |                           |          |                           |          |                        |
| 12:30                  | 13:00           |                  | 0.857      | 67.1     | 31.5      | 100.3     | 5.3       | 26.2      | 0.17        | 33.2     | 9.01     | 518      | 1.21     | 3.31      | 4.53     | 0.43                      | 0.50     | 50.3                      |          |                        |
| 13:00                  | 13:30           |                  | 0.846      | 66.0     | 31.5      | 100.2     | 6.1       | 25.4      | 0.19        | 34.2     | 8.89     | 579      | 1.25     | 3.80      | 5.06     | 0.48                      | 0.58     | 56.9                      |          |                        |
| 13:30                  | 14:00           |                  | 0.827      | 66.4     | 31.5      | 100.3     | 4.8       | 26.6      | 0.15        | 33.9     | 8.69     | 489      | 1.24     | 3.04      | 4.28     | 0.41                      | 0.46     | 49.2                      |          |                        |
| 14:00                  | 14:30           |                  | 0.771      | 66.7     | 31.5      | 100.3     | 5.9       | 25.6      | 0.19        | 33.5     | 8.11     | 564      | 1.23     | 3.70      | 4.93     | 0.47                      | 0.56     | 60.9                      |          |                        |
| 14:30                  | 15:00           |                  | 0.722      | 66.1     | 31.5      | 100.1     | 4.2       | 27.3      | 0.13        | 34.0     | 7.59     | 445      | 1.25     | 2.65      | 3.89     | 0.37                      | 0.40     | 51.3                      |          |                        |
| 15:00                  | 15:30           |                  | 0.642      | 66.3     | 31.5      | 100.1     | 5.1       | 26.4      | 0.16        | 33.8     | 6.75     | 509      | 1.24     | 3.21      | 4.45     | 0.42                      | 0.49     | 66.0                      |          |                        |
| 15:30                  | 16:00           |                  | 0.542      | 65.9     | 31.5      | 99.9      | 5.3       | 26.2      | 0.17        | 34.0     | 5.70     | 521      | 1.24     | 3.31      | 4.56     | 0.43                      | 0.50     | 79.9                      |          |                        |
| 16:00                  | 16:30           |                  | 0.437      | 66.7     | 31.5      | 99.7      | 3.4       | 28.1      | 0.11        | 33.0     | 4.59     | 382      | 1.21     | 2.13      | 3.34     | 0.32                      | 0.32     | 72.8                      |          |                        |
| 16:30                  | 17:00           |                  | 0.337      | 68.8     | 31.5      | 99.4      | 2.0       | 29.4      | 0.06        | 30.7     | 3.54     | 275      | 1.12     | 1.28      | 2.41     | 0.23                      | 0.19     | 67.9                      |          |                        |
| 17:00                  | 17:30           |                  | 0.232      | 72.7     | 31.5      | 99.0      | 1.8       | 29.7      | 0.06        | 26.4     | 2.44     | 237      | 0.96     | 1.10      | 2.07     | 0.20                      | 0.17     | 84.8                      |          |                        |
| Average 6h             |                 |                  | 0.758      | kW       |           |           | 5.4       | kg 6h     | 0.17        |          | 7.97     | kW       |          |           | 4.64     | 0.44                      | 0.51     | 58.2                      |          |                        |
| Average 9h             |                 |                  | 0.637      | kW       |           |           | 4.3       | kg 9h     | 0.14        |          | 6.70     | kW       |          | 3.88      | 0.37     |                           | 0.41     | 57.8                      |          |                        |
| Total 6h               |                 |                  | 4.55       | kWh / 6h |           |           | 32.2      | kg 6h     |             |          | 47.8     | kWh / 6h | 4534     | 'kWh / 6h | 27.8     | kWh / m <sup>2</sup> / 9h | 2.65     | kWh / m <sup>2</sup> / 9h | 3.06     | kg/m <sup>2</sup> / 6h |
| Total 9h               |                 |                  | 5.74       | kWh / 9h |           |           | 39.0      | kg 9h     |             |          | 60.3     | kWh / 9h | 3617     | 'kWh / 9h | 34.9     | kWh / m <sup>2</sup> / 9h | 3.32     | kWh / m <sup>2</sup> / 9h | 3.71     | kg/m <sup>2</sup> / 9h |

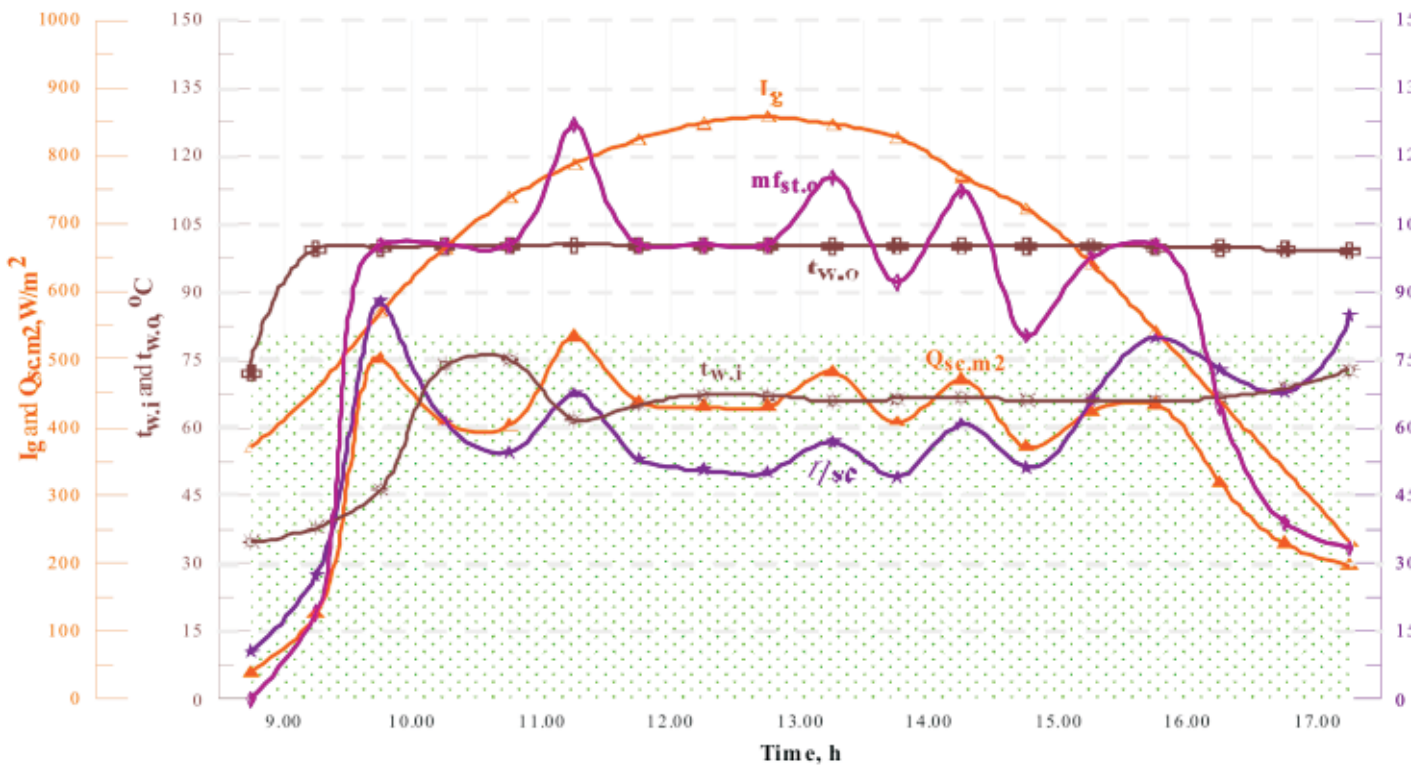


Figure 2: Test results of HP\_SC for Steam Generation in April, 2011  
 $b = 0^\circ$  volt  $w_{sc,i} = 31.5$  lph  $Q_{sc,1.9h} = 60.3$  kWh  $Q_{sc,9h} = 34.9$  kWh  $h_{sc,9h} = 57.8$

Table 2: Results of Testing of HP\_SC for Water Heating in March, 2011

| Time                          | Insolation |       | Inlet |           | Outlet    |           | Performance    |                |                |          |          |          |          |          |          |          |          |          |
|-------------------------------|------------|-------|-------|-----------|-----------|-----------|----------------|----------------|----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                               | $T_a$      | $T_s$ | $I_g$ | $t_{w,i}$ | $t_{w,o}$ | $t_{w,o}$ | $\dot{m}_{sc}$ | $\dot{m}_{sc}$ | $\dot{m}_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ | $Q_{sc}$ |
| <b>Measured Values</b>        |            |       |       |           |           |           |                |                |                |          |          |          |          |          |          |          |          |          |
| 08:30                         | 09:00      | 0.359 | 28.7  | 142.9     | 30.8      | 0.0       | 142.9          | 0.00           | 2.1            | 3.77     | 9        | 0.35     | 0.00     | 0.35     | 0.03     | 0.00     | 9.2      |          |
| 09:00                         | 09:30      | 0.474 | 28.5  | 142.9     | 47.9      | 0.0       | 142.9          | 0.00           | 19.4           | 4.98     | 81       | 3.22     | 0.00     | 3.22     | 0.31     | 0.00     | 64.7     |          |
| 09:30                         | 10:00      | 0.515 | 28.3  | 142.9     | 60.9      | 0.0       | 142.9          | 0.00           | 32.6           | 5.41     | 136      | 5.42     | 0.00     | 5.42     | 0.52     | 0.00     | 100.0    |          |
| 10:00                         | 10:30      | 0.611 | 28.1  | 142.9     | 62.6      | 0.0       | 142.9          | 0.00           | 34.5           | 6.42     | 144      | 5.73     | 0.00     | 5.73     | 0.55     | 0.00     | 89.2     |          |
| 10:30                         | 11:00      | 0.765 | 27.7  | 142.9     | 64.1      | 0.0       | 142.9          | 0.00           | 36.4           | 8.04     | 152      | 6.05     | 0.00     | 6.05     | 0.58     | 0.00     | 75.2     |          |
| 11:00                         | 11:30      | 0.807 | 27.2  | 142.9     | 65.5      | 0.0       | 142.9          | 0.00           | 38.3           | 8.48     | 160      | 6.36     | 0.00     | 6.36     | 0.61     | 0.00     | 75.0     |          |
| 11:30                         | 12:00      | 0.821 | 27.5  | 142.9     | 68.6      | 0.0       | 142.9          | 0.00           | 41.1           | 8.63     | 172      | 6.83     | 0.00     | 6.83     | 0.65     | 0.00     | 79.1     |          |
| 12:00                         | 12:30      | 0.854 | 27.1  | 142.9     | 64.9      | 0.0       | 142.9          | 0.00           | 37.8           | 8.98     | 158      | 6.28     | 0.00     | 6.28     | 0.60     | 0.00     | 70.0     |          |
| <b>Solar noon - 12:39 hrs</b> |            |       |       |           |           |           |                |                |                |          |          |          |          |          |          |          |          |          |
| 12:30                         | 13:00      | 0.862 | 28.3  | 142.9     | 64.9      | 0.0       | 142.9          | 0.00           | 36.6           | 9.06     | 153      | 6.08     | 0.00     | 6.08     | 0.58     | 0.00     | 67.1     |          |
| 13:00                         | 13:30      | 0.855 | 28.4  | 142.9     | 64.8      | 0.0       | 142.9          | 0.00           | 36.4           | 8.99     | 152      | 6.05     | 0.00     | 6.05     | 0.58     | 0.00     | 67.3     |          |
| 13:30                         | 14:00      | 0.839 | 28.4  | 142.9     | 63.3      | 0.0       | 142.9          | 0.00           | 34.9           | 8.82     | 146      | 5.80     | 0.00     | 5.80     | 0.55     | 0.00     | 65.7     |          |
| 14:00                         | 14:30      | 0.802 | 28.8  | 142.9     | 64.1      | 0.0       | 142.9          | 0.00           | 35.3           | 8.43     | 148      | 5.86     | 0.00     | 5.86     | 0.56     | 0.00     | 69.6     |          |
| 14:30                         | 15:00      | 0.745 | 29.4  | 142.9     | 65.2      | 0.0       | 142.9          | 0.00           | 35.8           | 7.83     | 150      | 5.95     | 0.00     | 5.95     | 0.57     | 0.00     | 75.9     |          |
| 15:00                         | 15:30      | 0.677 | 29.9  | 142.9     | 64.9      | 0.0       | 142.9          | 0.00           | 35.0           | 7.12     | 147      | 5.82     | 0.00     | 5.82     | 0.55     | 0.00     | 81.7     |          |
| 15:30                         | 16:00      | 0.575 | 30.2  | 142.9     | 63.8      | 0.0       | 142.9          | 0.00           | 33.6           | 6.04     | 141      | 5.58     | 0.00     | 5.58     | 0.53     | 0.00     | 92.4     |          |
| 16:00                         | 16:30      | 0.465 | 30.1  | 142.9     | 60.5      | 0.0       | 142.9          | 0.00           | 30.4           | 4.89     | 127      | 5.05     | 0.00     | 5.05     | 0.48     | 0.00     | 103.3    |          |
| 16:30                         | 17:00      | 0.356 | 30.8  | 142.9     | 58.5      | 0.0       | 142.9          | 0.00           | 27.7           | 3.74     | 116      | 4.60     | 0.00     | 4.60     | 0.44     | 0.00     | 123.0    |          |
| 17:00                         | 17:30      | 0.246 | 30.0  | 142.9     | 44.6      | 0.0       | 142.9          | 0.00           | 14.6           | 2.59     | 61       | 2.43     | 0.00     | 2.43     | 0.23     | 0.00     | 93.8     |          |
| <b>Average 6h</b>             |            | 0.763 | kW    |           | 64.5      | 0.0       | kg/h           | 6h             | 8.02           | kW       |          | 6.02     | kg/h     |          | 0.57     | kg/h     | 75.1     |          |
| <b>Average 9h</b>             |            | 0.646 | kW    |           | 60.0      | 0.0       | kg/h           | 9h             | 6.79           | kW       |          | 5.19     | kg/h     |          | 0.49     | kg/h     | 76.5     |          |
| <b>Total 6h</b>               |            | 4.577 | kWh   |           | 6h        | 0.0       | kg             | 6h             | 48.11          | kWh      |          | 3493     | kWh      |          | 3.43     | kg       | 6h       |          |
| <b>Total 9h</b>               |            | 5.814 | kWh   |           | 9h        | 0.0       | kg             | 9h             | 61.12          | kWh      |          | 2772     | kWh      |          | 4.33     | kg       | 9h       |          |

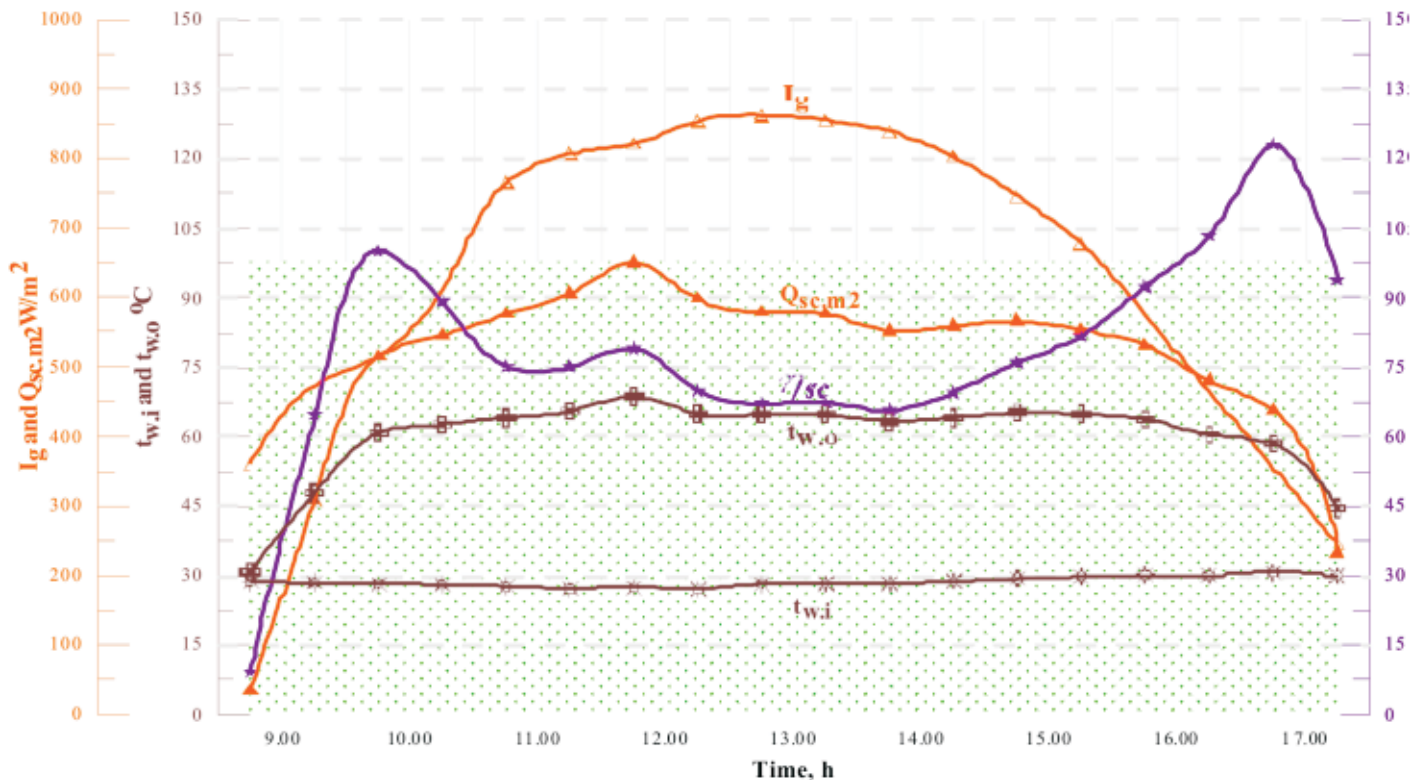


Figure 3: Test result of HP\_SC for Water Heating in March, 2011  
 $b = 0^\circ$  volf  $t_{w,ov} = 2.4$  lpm  $Q_{sc,1.9h} = 61.1$  kWh  $Q_{sc,9h} = 46.7$  kWh  $h_{sc,9h} = 76.5\%$   $t_{w,ov,9h} = 60^\circ$ C

#### 4. Economics of HP\_SC

Let us take example of steam generation case cited above. Table 3 shows the calculations for cost analysis of the HP\_SC.

Table 3: Economics of HP\_SC

| Parameters   | Value | Unit                   |
|--|-------|------------------------|
| Total heat output of the collector in a day  | 34.9  | kWh/day                |
| The area of the collector  | 10.5  | m <sup>2</sup>         |
| Heat collected per m <sup>2</sup> of collector per day   | 3.32  | kWh/m <sup>2</sup> day |
| Assuming cost of heat  | 5     | ₹/kWh                  |
| Cost of energy saved   | 16.6  | ₹/m <sup>2</sup> day   |
| Cost of collector for customer assuming subsidy offered by MNRE @ ₹3500/m <sup>2</sup> ( <a href="http://www.mnre.gov.in">http://www.mnre.gov.in</a> ) and collector cost of ₹12000/m <sup>2</sup> | 8500  | ₹/m <sup>2</sup>       |
| Payback period   | 512   | Solar days             |

If there are 250 working days in a year, the cost of the collector will be recovered in around two years. If depreciation is taken into account, the payback will be less than one year. This efficient, light weight, low cost non-tracking HP\_SC opens up new opportunities in solar process heating field.

#### 5. Plastic Solar Air Heater, PSAH

A conventional flat plate solar air heater typically consists of an absorber plate, a transparent top cover and insulation on three sides. The assembly is encased in sheet metal. Study of the reported literature related to flat plate solar air heaters reveals following technological gaps:

- Use of a single glass sheet is incapable of reducing top loss, resulting in reduced collector efficiency
- Multiple top covers used to reduce top loss result in increase in the weight and cost of the collector
- Jet plate solar heaters are subjected to significant fluid pressure drop and result in increased blower/pump power

There has been a longstanding need to provide a flat plate solar air heater featuring reduced top losses while keeping the weight of the collector low; enhancing efficiency while reducing the pressure drop and power required for circulation and keeping the cost low while being capable of meeting space air heating needs in ambient as low as -30°C.

Use of low cost light weight plastic materials have been reported in recent times by *Njomo (1995)*, *Janjai et al. (2000)*, *Rane (2004)* and *Popel et al. (2008)*.

A novel solar air heater is developed in Heat Pump Laboratory, IIT Bombay, HPL\_IITB, which addresses many of the technical gaps in reported literature of flat plate solar air heaters and satisfying longstanding needs in this arena. This solar air heater comprises of

- Translucent multi-wall top cover with several integrated flutes/passages
- Opaque multi-wall absorber with several integrated flutes/passages
- Inlet and outlet manifolds for absorber as well as top cover
- blower/pumping means, optional
- Insulation

The option of multi-pass heating of air can be used when ambient temperatures are very low. Air passages can be designed to meet the application requirements so as to keep the air side pressure drops and power consumption of the circulator low.

Assuming 5 to 6 kWh/m<sup>2</sup>.d solar insolation on horizontal surface and about 60% efficiency of the collector, the hot air at about 40 to 90°C can be delivered serving applications like space heating, industrial hot air or agro products drying. A temperature rise of about 60°C is expected even at -30°C ambient. Lifespan of these air heaters is expected to be 5 to 10 years and can be extended up to 20 years by replacing some components. Expected mass production cost will be in the range of ` 2300 to ` 3200/m<sup>2</sup>, price reference year being 2011.



## 6. Performance of Plastic Solar Air Heater

Experiments were conducted with the following objectives:

- To measure efficiency of the novel flat plate fluid heating device while heating ambient air.
- Compare the efficiency and weight of the novel heating device with that of the conventional flat plate device.

Conventional device selected for the comparison is a single glass glazing flat plate collector, FPC, with perforated absorber plate with selective coating. Results obtained for the conventional and the novel heating device of the novel collector are shown in Table 4.

Table 4: Comparison of PSAH and FPC

| Parameters             | PSAH | FPC | Unit             |
|------------------------|------|-----|------------------|
| Inlet Air Temperature  | 29   | 29  | °C               |
| Outlet Air Temperature | 104  | 80  | °C               |
| Aperture Area          | 2    | 2   | m <sup>2</sup>   |
| Heat Collected         | 1176 | 800 | W                |
| Volume Flow Rate       | 780  | 780 | lpm              |
| Insolation             | 910  | 910 | W/m <sup>2</sup> |
| Efficiency             | 65   | 44  | %                |
| Collector Weight       | 12   | 42  | kg               |
| Pressure Drop          | 50   | 250 | Pa               |

It is evident from this experiment that a judicious combination of translucent multi-wall sheet as a top cover with multi-wall sheet absorber results in increased efficiency from 44 to 64%. Pressure drop reduced from 250 to 50 Pa. Collector weight for 2 m<sup>2</sup> collector reduced from 42 to 12 kg

## 7. Economics of PSAH

Following are the calculations for cost analysis of the PSAH integrated with agro product dryer shown in Table 5, price reference year being 2011

Table 5: Economics of PSAH

| Parameters   | Value | Unit             |
|--|-------|------------------|
| Collector area   | 2     | m <sup>2</sup>   |
| Average solar insolation                                     | 750   | m <sup>2</sup>   |
| Collector efficiency   | 65    | W/m <sup>2</sup> |
| Heat collected   | 487.5 | %                |
| Initial moisture content                                     | 86    | W/m <sup>2</sup> |
| Final moisture content                                       | 8     | %                |
| Quantity of the onion to be dried                            | 5.4   | %                |
| Price of onion to be dried @ ₹ 7.5 /kg                       | 40.5  | kg/day           |
| Quantity of final dried onion                                | 1.19  | ₹                |
| Price of dried onion @ ₹ 85 /kg                              | 101   | kg               |
| Total cost of the dryer to the farmer including PSAH         | 6500  | ₹                |
| Interest component on investment by the farmer @ 11% p.a.    | 715   | ₹                |
| Total investment by the farmer                               | 7215  | ₹                |
| Labour cost @ ₹ 200/day, 1 person can handle 10 solar dryers | 20    | ₹                |
| Total cost to the farmer                                     | 60.5  | ₹                |
| Profit to the farmer   | 40.5  | ₹                |
| Payback period   | 178   | Solar day        |

An agro product dryer integrated with this novel collector can dry

**Onion & Tomatoes:** 2.4 to 3 kg/m<sup>2</sup>day

**Potatoes, Chillies & Amla:** 4.5 to 5 kg/m<sup>2</sup>day

**Spices:** 3 to 5 kg/m<sup>2</sup>day

**Grapes:** 1.5 to 2 kg/m<sup>2</sup>day

## 8. Conclusions

Two promising solar collectors for low temperature heating application are discussed in this article. These cost effective, light weight and modular collectors, developed at HPL\_IITB are ready for commercialization. Heat Pipe based Evacuated Glass Tube Solar Collector, HP\_SC, delivered around 3.3 kWh/m<sup>2</sup> heat in the form of saturated steam at 1 bar and 100°C over a period of 9 hours, giving 58% efficiency at an average insolation of 637 W/m<sup>2</sup>. In case of water heating it delivered 144 lph of hot water at average temperature of 60°C with 76.5% efficiency during the period of 9 hours. The cost of HP\_SC is around ₹ 12,000/m<sup>2</sup>, which can be recovered in around two years considering subsidy. The payback would be as low as 1 year, if depreciation is also included. Plastic Solar Air Heater, PSAH has delivered 588 W/m<sup>2</sup> while heating ambient air to 104°C. Volume flow rate of the air was 780 lpm and collector efficiency was recorded as 65% for solar insolation of 910 W/m<sup>2</sup>. Weight of the collector is 12 kg and the pressure drop on the air side was as low as 50 Pa. The payback period for PSAH used for onion drying works out to be about 178 solar days.

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# G. N. Bajpai, Former Chairman, SEBI is the new Chairman of Indian SME Knowledge Forum



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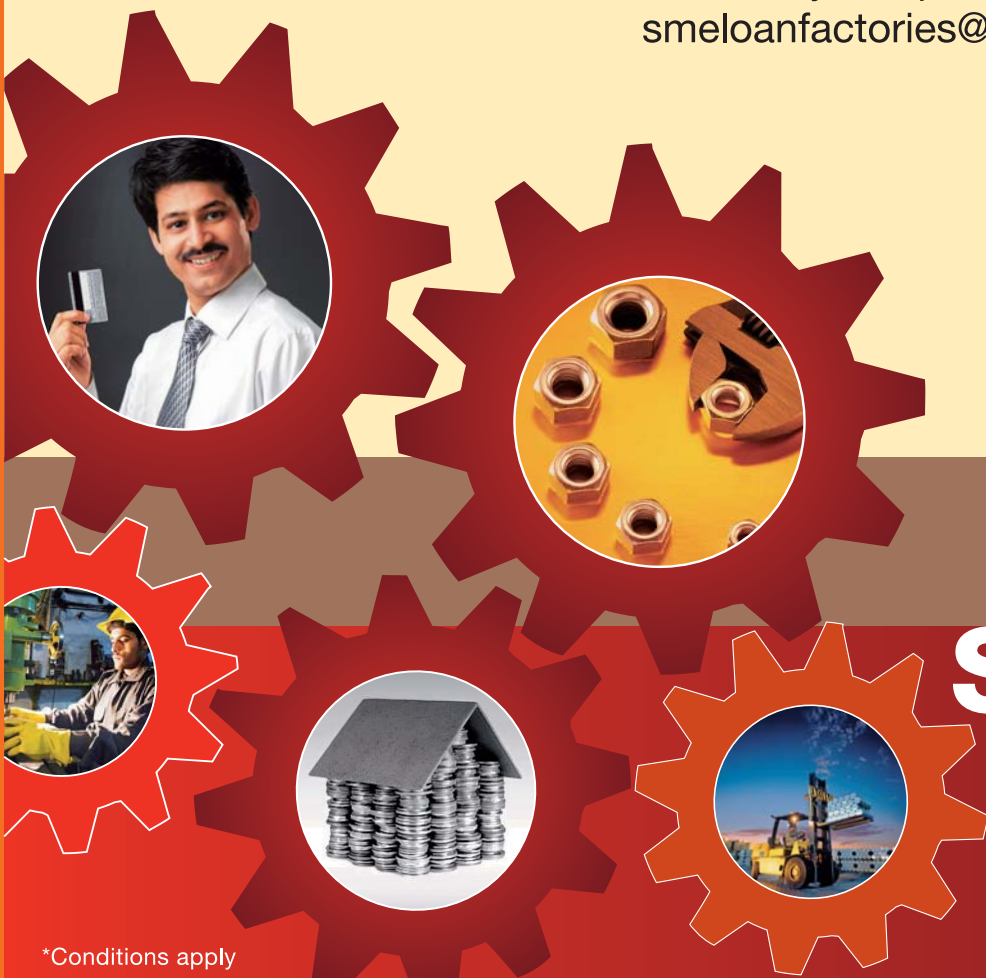
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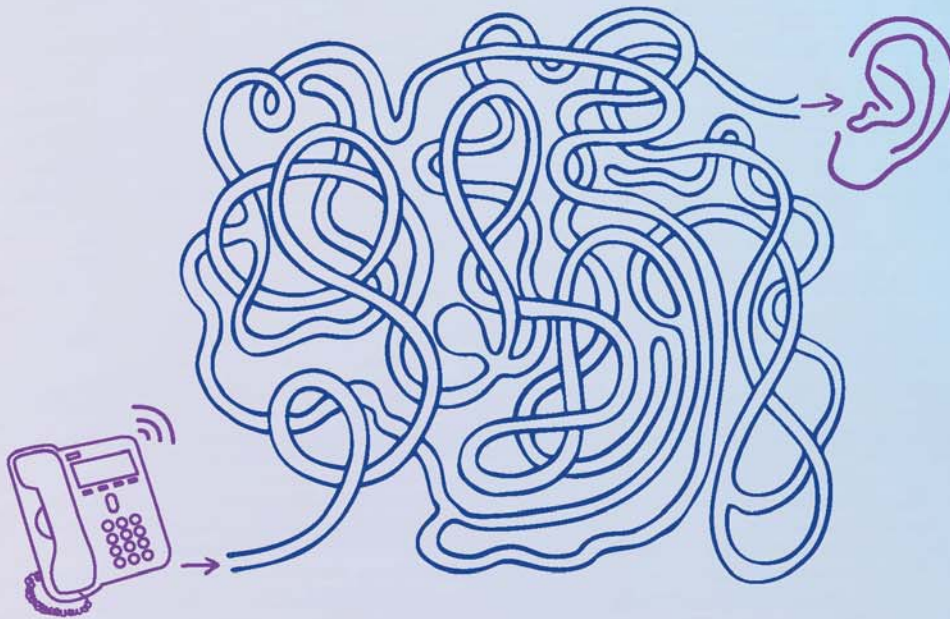
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