

# Tech Ventures & Opportunities

## Business Coach for innovative firms

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### APCTT invites articles for the 'Business Coach'

The 'Business Coach' section features short articles providing useful guidance and tips to small and medium enterprises (SME) on Start-up Venture Creation, Venture Finance, Managing Innovation, Technology Transfer, Partnerships, Venture Management, and Green Productivity. We invite articles on the above topics for the 'Business Coach' section of the Asia Pacific Tech Monitor.

The articles could be written in about a 1000 words with a few figures and tables wherever appropriate. Executives of SMEs in the Asia Pacific region being the main target group of the journal, the articles should be relevant to them and written in non-technical language. The articles will not undergo any substantial editing; however, if required APCTT reserves the right to edit the text from language and technical points of view, to bring it in conformity with the style and layout of the journal. You could access and view sample articles featured in the 'Business Coach' section of our journal at: <http://www.techmonitor.net>.

The articles should be sent to: [postmaster@apctt.org](mailto:postmaster@apctt.org); [srini@apctt.org](mailto:srini@apctt.org)



# Start-up venture creation

## VIT-technology business incubator services

<http://www.vittbi.com>

Vellore Institute of Technology, India

The Technology Business Incubator of Vellore Institute of Technology creates commercially successful high-tech ventures by nurturing them with the resources these ventures need. For example, in the early stage, VIT-TBI will assist the incubatee in assessing the market potential of the business idea by guiding them through the process, which the incubatee has to implement on his own with his resources and some assistance from VIT-TBI.

Such early stage advice and consultancy offered by VIT-TBI will be a free service. When the promoter and VIT-TBI is satisfied with the project idea and its success potential, the incubatee will enter into an agreement with VIT-TBI for availing the services of the TBI on mutually agreed terms and conditions.

TBI would collect a nominal fee for the services and the space and technical support provided. As all the tenant incubatees are sharing these resources from a common pool, the incubatees will benefit from the lower cost of resources in the early stages.

The form of compensation and the payment mode would be tailored to specific needs and based on each individual case. More details on the types of financial arrangement and agreement between VIT-TBI and promoters will be dealt with in the later part of this document.

Broadly, all the activities referred to in the four stages above can be summed up as follows:

### Ideation/Innovation stage

- Concept development/opportunity spotting;
- Market assessment/competition analysis;
- First level business planning/business modelling;
- Founding team formation;
- Intellectual property safeguarding; and
- Seed funding.

### Incubation stage

- Mentoring;
- Advisory board;
- Proof of concept/prototyping;
- Financial assistance;
- Test marketing; and
- Full scale business planning.

### Implementation stage

- Full-scale business planning;
- Pitching for venture funding;
- Scaling up operations; and
- Large-scale commercialization.

### Take-off stage

- Going national/global;
- Initial public offering;
- Exit provisioning for venture capitalists; and
- Full-scale business graduation.

Mature Team Formation VIT-TBI can assist potential and qualifying ventures/incubatees by supporting them from stage A to C, as described above and if needed, can extend the support during stage D too. The role of VIT-TBI will also depend on the individual cases, their strengths, weaknesses and extent of support required by the tenet incubatees.

VIT-TBI can only assist the venture promoters in all these stages, but can never replace entrepreneurship demanded from the promoters for business. Hence, the entrepreneurship of the promoters play a very important role in the success of these ventures. To encourage entrepreneurship, VIT-TBI will train the potential entrepreneurs and guide them through the process of business venturing through interactive workshops and constant nurturing.

VIT-TBI's focus is to create commercially successful high-tech ventures by nurturing them with the resources these ventures need. For example, in the first stage, VIT-TBI will assist the incubatee in assessing the market potential of the business idea by guiding them through the process, which the incubatee has to implement on his own with his resources and some assistance from VIT-TBI.

VIT-TBI assists the incubatees in:

- Enterprise development;
- Providing them access to a network of eminent consultants/academicians;
- Offering flexible affordable working space;
- Shared office/infrastructure services;
- Prototype development/technical assistance;
- Assistance in building management teams;
- Assistance in getting finance; and
- Assistance in marketing. □



# Why insure your venture?

## What you need to consider

<http://www.sme.com.ph>

SME.com.ph, The Philippines

Running or owning a business involves risks both in your venture and your liabilities. That is a fact you cannot deny and the reason why liability insurance deals with possible risks that your business could face.

Your business could be badly hurt if you do not protect it in some way. Consider this, would you have the financial capabilities to replace your assets if they get damaged? What if you consider moving to a new locale and the existing venue is rendered uninhabitable or needs further improvement? What is worst then, if you need to defend a lawsuit that you might possibly run into and need to pay for damages and legal fees?

Those are just a few things you need to consider why you have to insure your business one way or the other. Would you have the financial muscle to replace your assets when it is faced with a disastrous occurrence or you find risks such as mentioned previously? Even if you're a small-medium entrepreneur, the need to consider insuring your business is indeed a big one!

To date, there are 115 companies in the Philippines offering insurance products to corporations and individuals. Philippine insurance companies generally follow international practice but with a few local variants for good measure. The legal system governing the industry is a mixture of Spanish, Islamic and Anglo/American codes so it is wise to read the small print just to be sure you know what you are getting.

### Three compelling reasons to be insured

#### Insurance protects your assets.

Don't disregard the fact that even frivolous claims will cost time and money to just defend yourself. There are insurance programs that are automatically for your company's defense - our company only pays if there is judgment in the plaintiff's favour or a settlement; ensuring that your assets remain to be yours.

#### Your ally: when a claim is brought against you.

If you are a policyholder of a certain insurance company, they'll match a defense attorney who will fight for you and your reputation. There is this Small Firm program that will pay your defense costs up to your policy limit, not to mention the pre-claims assistance to help you come to terms with a problem before it turns into a claim.

#### Some require professional liability coverage.

If you are a professional, there are many projects that would need your services with project liability insurance. If you keep your professional liability coverage, this is a good means of making sure that you're meeting your obligations, which shows that you're eligible for more projects.

### Types of insurance you may want to consider

With its vision to bringing in various new types of insurance, its system has been improved in order to ensure smooth fund flows that will help meet SMEs' needs. The maximum amount of insurance for one enterprise was raised several times. The Japan Small and Medium Enterprises Corp. (Jasmec) offers the following eight types of insurance for indirect finance to CGCs, which are:

- Ordinary insurance to facilitate the borrowing of funds for general purposes;
- No collateral insurance to allow SMEs to borrow money without collateral;
- Special small-sum insurance to give small-scale enterprises with 20 employees or fewer, (in the trade and service industries, five employees or fewer) access to loans without collateral and guarantor;
- Accounts receivable-backed insurance to allow SMEs to borrow money by using their accounts receivable as collateral; and
- Environmental pollution preventive facilities insurance, energy saving facilities insurance, overseas investment financing insurance and new business development insurance to promote the smooth flow of funds for specific projects without difficulties.

*Note: The type of insurance to be applied depends on the nature of the guarantee provided by CGCs.*

### Special treatment of insurance

Based on the government's policy for SMEs, to actively take special measures, there are 32 special treatments, which offer preferential insurance conditions in terms of the maximum insurable amount, coverage and premium rates. For instance, these treatments can be applied to help SMEs damaged by natural disasters, to support SMEs suffering from changes in the economic environment or credit contraction and to promote business start-ups.

A prospective entrepreneur, basically excluded from the conventional credit supplementation system (CSS), is eligible for insurance when he qualifies for one of these special treatments related to business start-ups, for instance.

Somehow, if you have a venture that has assets worth no more than 3 million (micro enterprise), 15 million (small enterprise) and 100 million (medium enterprise) in pesos - these is a lot of money, which you need to take care and secure.

All these are for you to avoid future trouble or even just a minor headache that would also deem to cause disruption to your business. Also, your business is your profession. And projecting such an image, your clients (now and the future) would have great expectations of your work because they would rather seek to work with someone who has taken time to get insured. □



# How to finance your business

## The art of getting the money

<http://india.smetoolkit.org>

SME Toolkit India

This starts by knowing what your lender wants. A common way is to simply ask. A better way is to ask a friend or business advisor such as your CPA.

For a business loan, the most common things are:

- Business financial statements;
- Business tax returns;
- Business plan with budget or projection;
- Personal financial statements; and
- Personal tax returns.

Step two is to be ready to answer questions about your business, and be ready to highlight your financial performance both in the past and in the future. You will be more impressive if you have carefully thought-out and become familiar with your plan. Bring your accountant if you need help.

Be prepared to tell them why you need the money. "I just need the money," does not inspire confidence or the fact that you have thought it through. Earlier in this session you studied a number of different purposes. Give them some detail.

Propose a repayment plan. Examples of different structures are:

- A line of credit, payable at your discretion but subject to renewal annually by the bank; and
- Term loan payable monthly over \_\_\_ years starting on \_\_\_ date.

Most places have some flexibility. Potential lenders appreciate that you are thinking about paying them back instead of just getting the money.

Other tips to keep in mind:

- Needless to say, being well-dressed and neat in appearance at bank meetings will reflect positively.
- Most lenders (including the SBA) will want to see your business plan.
- Keep your lenders informed on the status of your business: the good and the bad.

- If you are unable to make a loan payment on time, call your lender in advance, advise him/her of the problem and request the extension you need. Explain the sources of repayment.
- Virtually all lenders will do a personal savings and corporate credit check through a company called TRW or other means. Be prepared to discuss any prior credit issues/problems. The best access to a lender is by a referral. Lending is a people business. Have your CPA or attorney or friend introduce you to a lender.
- The first thing that will spook lenders or investors is the fear you are "puff" rather than "substance." Avoid giving the impression of being an over optimistic, "pie-in-the-sky" operator.
- Most start-up businesses don't find a place for expensive entertaining. Your lenders will be more interested in knowing how their money is being used to grow your business.
- Do not depend on a bank to loan you money to start a business. Most small businesses are funded by personal savings.
- Make a shrewd appraisal to minimize your risks and to limit losses to a predetermined limit.
- Your suppliers and vendors can be sources of financing. For example, if you need an illuminated sign for your store front, the company you contract with to make the sign may provide financing so you can make monthly payments rather than pay cash. (They want your business.) Examples:
  - Longer payment terms;
  - Advertising and marketing assistance;
  - Furnishing or financing of equipment, signs or inventory; and
  - Advertising and promotional programmes.
- Bartering, which is to trade by exchange one commodity for another, can provide a source of financing. For example your advertisements in the local newspaper might be paid for by the bagels you make! ☐

### South Asian Network of Microfinance Initiatives

SANMFI is exclusively focused on South Asia and dedicated to linking, strengthening and promoting microfinance institutions in the region through influencing policies and promoting best practices.

For more information, contact:

South Asian Network of Microfinance Initiatives, House 51, Road 12A, Dhanmondi R/A, Dhaka 1209, Bangladesh  
Tel: (+880-2) 823 640, 823 637; Fax: (+880-2) 823 631; E-mail: [sanmfi@bangla.net](mailto:sanmfi@bangla.net); Web: [www.focus-asia/home/sanmfi](http://www.focus-asia/home/sanmfi)



# Venture capitalists

## How they invest their money

<http://www.hkvca.com.hk>

The investment process, from the initial evaluation stage to completion of documentation, usually takes a minimum of three to six months.

### Initial evaluation

The request for financing, business plan (for companies already in operations) and audited financial statements must first be submitted to the venture capital firm which will then determine the merits of the proposal. During this process, many applications for funds will be turned down, as they do not fit into the venture capital firm's investment criteria.

### Initial negotiation

Where a venture capitalist is interested in the project, he will discuss and negotiate the general terms and structure of the investment with the entrepreneur. He will then submit his recommendation to his Investment Committee for initial approval.

### Due diligence

When the initial investment proposal is approved, a Memorandum of Understanding on the broad terms and structure will be agreed upon. It will be necessary at this stage for the venture capitalist to verify the facts and assumptions presented in the proposal. They will conduct further independent investigation on the product and its technology; the market and its competitors; and, the distribution network. Often the help of outside consultants and market research are sought. The financials plans are reviewed rigorously. During this process, full disclosure by the company is important, and the company's staff, suppliers, customers, banks, accountants and lawyers may be interviewed.

### Final negotiation and completion

Many issues will be covered, but the key points may be:

**Price:** Using the data and insight obtained during the due diligence process, the venture capitalist will undertake a "valuation" of the company by application of price to earnings multiples, asset valuation and other required return calculations.

### Hong Kong Venture Capital and Private Equity Association Ltd., Hong Kong, China

**Structure:** The decision will be made on the amount of investment and whether it should take the form of equity, quasi-equity or other hybrid instruments (common shares, preferred shares, convertible loans, warrants, options). In buyouts it is normal for a new company to be formed to acquire the assets and trading liabilities. Debt financing if available will be simultaneously injected into the transaction at completion.

**Role:** The extent of the venture capital investor's participation in the affairs of the company will be determined. This could involve representation at the board level, the appointment of a financial controller or other key management personnel, disclosure requirements, minority shareholders' protection and rights.

Upon formal approval of the investment by the venture capitalist's investment committee, legal documents will be prepared and signed. The shareholders' agreement will spell out the rights and obligations of both parties covering the terms of the investment, voting rights, sale arrangements, dividend policy, and venture capitalist's approval on matters that may affect the business plan.

### Monitoring

The venture capital firm's representatives on the company's board will be able to participate actively on all major decisions. The venture capitalist will also monitor its investment closely through regular reviews of financials and operations with management. It is usual in buyouts that the venture capital firm will control the board of the company.

### Exit

Venture capitalists typically exit the investment between 3-5 years after the investment date. Entrepreneur should be clear that venture capitalists require that an exit strategy be agreed with the entrepreneur before the investment is made and that this is constantly reviewed during the investment holding period. □

### VCP Pro Database 2008

VCP Pro Database 2008 is a downloadable and searchable venture capital database with 3,800+ venture capital and private equity firms worldwide. This is a reliable, up-to-date and comprehensive venture capital directory of its kind. Each firm listing in the proprietary venture capital database includes the following data fields:

- Contact information: Company name; Address1; Address2; City; State; Zip/Postal; Country; Phone; Fax; E-mail; Website; Type of firm; Capital managed; Year founded; Name, Title and E-mail of key executives; Firm description; Branch offices
- Investment Criteria: Minimum investment size; Maximum investment size; Types of financing; Stage preferences; Industry preferences; Geographic preferences

For more information, contact:

Venture Capital Access Online; Tel: 888-800-1508; E-mail: [contactus@vcaonline.com](mailto:contactus@vcaonline.com); Web: <http://www.vcaonline.com>



# Technology licensing

## Success stories

<http://www.nif.org.in>

The National Innovation Foundation, NIF along with Grass-root Innovation Augmentation Network, GIAN and other incubation partners have successfully licensed and commercialized a number of grassroots technologies to different entrepreneurs in India and across the globe. The proceeds of which was shared with other stakeholders as per the Prior Informed Consent, PIC framework of NIF.

### Cases of technology licensing

#### Aaruni cart

This is an innovatively designed bullock cart to overcome the shortcomings of traditional carts by having an additional wheel to balance the load, along with a tilting mechanism, based on a rope and pulley system which can be controlled by a lever located alongside the cart driver.

This innovation was developed by Mr. Amrutlal Agarwat of Gujarat and exclusive marketing and manufacturing right was licensed in December, 1999 to three different entrepreneurs, M/s Shiva Iron works of Ahmedabad, Gujarat for Ahmedabad district, M/s Ambica Agro Industries of Bhavnager for Bhavnager and M/s Kishan Industries of Mehsana, for the three districts of Mehsana, Bansakantha and Sabarkantha.

#### Air kick pump

This is a device to inflate tyre tubes of two wheelers or any vehicle having a kick start or auto start mechanism so as to enable the rider to reach a nearby help station or repair shop. In this device air inside the compressor, while kicking, is utilized and transferred to the tube. A pinch of polymer granules is inserted to seal the leakage in the tube. This innovation was developed by Mr. Arvindbhai Patel. All the exclusive marketing and manufacturing rights for the technology has been licensed in September 2002 to M/s Mouldwell Enterprise, Maharashtra for Rs 37,500 down Payment + 2% Royalty for the first five years, 1% for the next five years and 0.5% for the next five years.

#### Beauty care umbrella

This umbrella helps in protecting the user from UV radiation (up to 85%), thus effectively guarding against darkening of the skin and sunburns while adding a glow to the skin of the user.

The technology for the Muga silk based beauty care umbrella has been transferred for an upfront fee of Rs 2 lakhs for marketing rights in India and Rs 3 lakhs for foreign rights, along with 6 per cent royalty. Also a benefit sharing arrangement has been finalized in which a share equivalent to 10 per cent and 5 per cent would accrue to the Innovator and GIAN-NE respectively on future sales. In addition, the licensee has agreed to purchase the muga cloth from the innovator at market price.

### National Innovation Foundation, India

#### Cassava peeling machine

This machine is easy to operate and maintain, and is made out of stainless steel and food grade rubber components. It has a peeling capacity of 5-6 kg per minute.

The technology was transferred for an upfront technology transfer fee of Rs 85,000 and 2 per cent royalty in addition to a share of 30 per cent and 3 per cent national equity stake for the innovator and GIAN-NE respectively.

#### Foot sprayer

This technology was innovated by Mr. Prabhatbhai Vaghani from Gujarat, wherein spraying pressure is generated through conversion of energy derived from the movement of ones feet, with the help of a cylinder and piston mechanism. The technology was licensed in July 2001 to M/s International Technologies, C/o William Wilkinson, P.O. Box 73, Salem, NJ 08079 for a consideration of US\$ 5000, having exclusive market and manufacture of sprayers for the whole world except India.

#### Natural water cooler

A low cost, energy efficient, environment friendly water cooler, which cools water naturally, based on the principle of heat exchange. The cooling process does not require an external power source for operation. The technology has tremendous potential in dry and hot climatic conditions (i.e. tropical) where electricity is not available. The exclusive manufacturing and marketing rights for the Natural Water Cooler for the states of Gujarat and Rajasthan were transferred in March 2001 to M/s Rachna industries from GIDC, Ahmedabad for a down payment of Rs. 1 lakh and a royalty of 2.5 per cent of sales for a period of five years.

#### Sprayers (Hand-driven sprayer, Khushal sprayer, Auto compression sprayer)

A portfolio of three sprayers developed by Mr. Gopalbhai Surtariya, Mr. Khemjibhai, Mr. Arvindbhai R Patel has been licensed to an entrepreneur Mr. Nileshbhai Satyasia, M/s Satyasia Industries for Rs 1,58,000 down payment + 5 % royalty for 5 years.

#### Unique coupling device

The device enhances the efficiency of power transmission, which can be integrated in automobiles, pumps and generators as couplers in power transmission systems or any other equipment where energy is transferred from a driver shaft to another shaft.

The technology know-how of the power disc, has been transferred to a local entrepreneur, Mr. Deepak Das of Guwahati for an upfront payment of Rs. 80,000 to the innovator. He contrib-

uted a sum of Rs. 20,000 towards Innovation Promotion Fund initiated by GIAN-NE. The GIAN-NE and the Innovator will receive a 10 per cent share in the equity as part of a goodwill agreement.

#### **Vanraj tractor**

This 10HP tractor is a small, low cost and highly efficient tractor innovated by Mr Bhanji Bhai has the potential of filling a vital demand gap which exists in the Indian market today. While the smallest tractors currently available in the market are in the 24HP range and generally cost upwards of Rs. 2.25 lakhs, there is a large chunk of farmers, especially those owning small land holdings, who cannot afford to buy these tractors. The technology has been acquired by M/s Parmal Farmatics Pvt. Ltd, Gujarat in October 2004 for an upfront transfer fee of Rs 3 lakhs and a 2.25 per cent royalty, with a 20 per cent equity stake in the proposed marketing company to be set-up for distribution and exclusive dealership to the innovator for two districts in Gujarat. Further, a confirmed order of Rs 1.25 lakhs for producing the first tractor has been given to the innovator.

#### **Groundnut thrasher**

The groundnut digger-cum-separator machine developed by Md. Yusuf Khan of Rajasthan is a sturdy, rugged desert unit which is used to dig and separate the leftover groundnut pods from the soil, which is otherwise done manually. The device works as an attachment to a 35HP (or more) tractor. GIAN-North facilitated the transfer of technology of this device to ARDEE Hi-Tech Pvt. Ltd., Visakhapatnam, Andhra Pradesh for further development for other applications. According to the agreement signed with ARDEE, ARDEE has paid the first down payment of Rs. 1,00,000 to the innovator through GIAN-North. The end product, resulting out of further development, would be a low cost machine for cleaning sea beaches. The development of the sea beach cleaner using the technology of the groundnut digger is going on at ARDEE Hi-Tech Pvt. Ltd., Vishakhapatnam.

#### **Commercialization of innovation**

##### **Bamboo splinting machine**

This small device, which increases the productivity of bamboo labourers engaged in developed by Mr. Usman Shekhan was test marketed with MVIF support in one of largest bamboo producing states of India, i.e., Assam. A total of 100 units were sent to GIAN-NE for exhibition and test marketing. Several product demonstrations were conducted in the International Bamboo Festival during December, 2004. Based on the high demand estimation, Viraasa, a NGO joined hands with GIAN-NE in further commercialization of the technology in the NE region.

##### **Garlic peeling machine**

This is an innovatively designed machine for the peeling of garlic, an essential ingredient in pickle and herbal formulation. The innovator Mr Nagrajan of M/s Virgo Industries had sold more than 50 such machines in the southern part of the country, with few business queries coming from Pakistan and the USA. Two such machines have been sold to Turkey and the USA.

##### **Improved treadle printing machine**

The innovator Mr. Satish Deb was supported for business development under MVIF by NIF. GIAN-NE facilitated the appointment of marketing franchisee in Assam to an entrepreneur Mr. Ishan Baruah for an upfront fee of Rs 25,000 and 4 % royalty to GIAN-NE. The innovator has already supplied five machines in NE.

##### **Milking machine**

A manually operated, low-cost milking machine has been receiving attention from the rural community engaged in animal husbandry. The innovator Mr. Raghav Gawda has developed his own enterprise M/s Ksheera Enterprises which is receiving more than 100 queries per month for the machine. Currently, the machine is available in 3 models with the price range of Rs. 10,000 to Rs. 22,000. The net sales exceed more than 200 machines per annum.

##### **Coconut tree climber**

The coconut tree climber is a novel, highly-in-demand product which is used to climb coconut trees for harvesting coconuts. The innovator, Mr (Late) Appachan, had developed the product way back in 2004, and since then it has involved in its production and commercialization M/s St Mary Industrial Research Centre based in Kerala. The product had received many queries from abroad and has been successful in selling more than 25 such pieces to the USA, Mexico, Norway, Australia and Thailand for coconut as well as betel nut harvesting. An indian patent has been granted for the innovation.

##### **Bullet santi**

This innovation is all about developing a low-cost portable machine which can function as a mini tractor as well as a road transport vehicle. The innovator Mr Mansukh Bhai Jagani had developed it with his 350 cc bullet motorcycle. The external attachment hardly takes 1 hour to transform the conventional bullet to a device similar to a mini tractor for all types of ploughing activities. The innovator has sold more than 200 such units in the past 3 years in and around Rajkot in Gujarat. An indian patent has been granted for the innovation.

##### **Mini sanitary napkin making machine**

It is a semi-automatic machine innovated by Mr A. Muruganatham, where we need about 3-4 persons to produce 700-800 pads/day. The mini sanitary napkin making machine has three different units, namely de-fibration, core forming, UV treatment and sealing unit. It is a technology to prepare low-cost sanitary napkins with variable density and equal density without compromising the raw materials and by cutting down the cost in production. With innovation, and its dissemination through SHG's, rural women can be uplifted economically by being provided with direct and indirect employment and health consciousness. The total unit costs Rs 1,00,000 and the cost of the final product works out to be Re 1/pad. NIF had supported the innovation with its Micro Venture Innovation Fund. At present the innovator is having its own manufacturing unit M/s Jayashree Industries at Coimbatore, and a total annual sales of more than 50 such units. □



# Technology transfer Agreements in India

<http://www.sethassociates.com>

**Seth Associates, India**

## Technology

Exponential Growth of Technology in India has played a significant role in the all-round development and growth of economy in our country. Technology can either be developed through our own research and development or it can be purchased through indigenous or imported sources. India has opted for a judicious mix of indigenous and imported technology. Purchase of technology is commonly called "Technology transfer" and it is generally covered by a technology transfer agreement.

'Technology transfer' means the use of knowledge and when we talk about transfer of the technology, we really mean the transfer of knowledge by way of an agreement between the states or companies. 'Transfer' does not mean the movement or delivery; transfer can only happen if technology is used. So, it is the application of technology and considered as a process by which technology developed for one purpose is used either in different applications or by a new user.

Technology generally would comprise the following elements:

- Process know-how;
- Design know-how;
- Engineering know-how;
- Manufacturing know-how;
- Application know-how; and
- Management know-how.

## Policy for foreign technology agreements

RBI accords automatic approval to all industries for foreign technology collaboration agreements subject to:

- The lump sum payments not exceeding US\$ 2 million; and
- Royalty payable being limited to 5 per cent for domestic sales and 8 per cent for export, subjected to a total payment of 8 per cent on sales over a 10-year period.

Payment of royalty up to 2 per cent for export and 1 per cent for domestic sales is allowed under automatic route on use of trademark and brand name of the foreign collaborator without technology transfer. In case of technology transfer, payment of royalty subsumes the payment of royalty for use of trademark and brand name of the foreign collaborators.

Payment of royalty up to 8 per cent for export and 5 per cent on domestic sales by wholly owned subsidiaries (WOS) to offshore parent companies is allowed under the automatic route, without any restriction on the duration of royalty payments.

All other proposals for foreign technology agreements not meeting the parameters for automatic approval are considered on merit by the Project Approval Board (PAB). This is chaired by the secretary, department of Industrial Policy and promotion, and the Ministry of Commerce and Industry.

## Procedure for approvals - Technology transfers by SIA

All others proposals of foreign technology agreement, not meeting any or all of the parameters for automatic approval, are considered for approval, on merits, by the Government.

Applications in respect of such proposals should be submitted through form FC/IL (SIA) to the secretariat for Industrial Assistance, Department of Industrial Policy Promotion, Ministry of Industry, Udyog Bhawan, New Delhi. No Fees is payable. Approvals are normally available within 4 weeks of filing the application.

## Scope for foreign collaboration

Government of India issues from time to time lists of Industries "where foreign investment may be permitted". The list so issued is illustrative only. No doubt, a broad technology base has been created in the country, yet a need to update the production technology may arise due to constant technological advancements in developed countries. Government of India (Foreign Investment Promotion Board) may consider import of technology in Industries other than those listed in priority list Annex 4A. □

### INPADOC-EPIDOS Patents database

INPADOC-EPIDOS (European Patent Information and Document Service) is one of the most comprehensive databases on patent bibliography and is published by the European Patent Office (EPO). EPO has been receiving the bibliography of all the patents filed and granted in approximately 71 countries since 1968 and contains over 33 millions references. Almost 3 millions references are added each year.

For more information, contact:

*Intellectual Property & KnowHow Informatics (Patent) Division  
National Informatics Centre, Department of Information Technology  
A-Block, CGO Complex, Lodhi Road, New Delhi - 110 003, India*

*Tel: (+91-11) 2436 3239; Fax: (+91-11) 2436 2628; E-mail: bali@nic.in; Web: <http://www.patinfo.nic.in>*



# Innovation

## Allocation of resources

<http://www.innovationinpractice.com>

**Drew Boyd, Innovation in Practice, USA**

Who leads innovation in your company: Marketing or R&D? It's a trick question, of course. But it's a useful question for Fortune 100 companies to consider. Has your company made a conscious choice of how it "allocates" this leadership role?

Allocating innovation to one group over the other will yield a different business result. The approaches to innovation by marketing are dramatically different from the approaches to innovation by R&D, so the outputs will be dramatically different. The question is, which group will outperform the other - technical-driven innovation or marketing-driven innovation?

But there is another layer of complexity. Allocating innovation resources to one group over the other will also yield a different kind of innovation. Market-driven innovation speaks to what is saleable. Technology-driven innovation speaks to what is technically possible. Which group delivers the type of innovation that is best suited to the company's growth strategy? Now the decision of who leads innovation becomes even stickier.

This question is a bit like deciding how to allocate your money in an investment portfolio. Which allocation of funds will give you the total return and the type of return (tax advantaged, etc) that you need? The tempting answer here is to assert innovation leadership should be shared between the two. Diversify your innovation allocation just as you would diversify your personal investment allocation. I'm not so sure. Here's why.

For a company that knows exactly what its customers need, then it's just a matter of developing it. A technically-led innovation approach makes the most sense. L'Oreal, for example, does virtually no market research with its customers. It gathers no "Voice of the Customer." Yet it knows exactly what customers need because....L'Oreal tells them! In that case, innovation is led by the technical team to deliver the beauty compounds and formulas that will thrill their customers. The innovation approach here is described as Problem-to-Solution. Engineers lead this because they excel at solution matching.

A company in the refrigerator space such as GE or Whirlpool needs a different approach. Breakthrough innovation is more likely to be found in the "Solution-to-Problem" mode, best driven by the commercial marketers who excel at problem matching. The marketer needs to use an approach that relieves them of their preconceived notions about what customers want. They seek to avoid "fixedness" around their current product so they can solution spot more freely. Only then will they be able to envision new concepts of home refrigeration that never would have emerged with a technical approach.

The best companies maximize their innovation investment return by consciously allocating leadership to either marketing or to R&D. In the end, innovation is best driven with a team approach but with clear role accountability and direction, depending on market conditions and corporate strategy. □

### 2008 Asia Pacific Biotechnology VC Directory

Produced by BioAblity and published by *BioWorld Today*, the 2008 Asia Pacific Biotechnology VC Directory provides the most accurate and current profiles available of VC firms in the Asia Pacific region that are investing in the biotech industry. The Directory provides information regarding the VC firms in China, India, Korea, Australia, New Zealand and nine other countries in Asia that are currently looking to invest in biotechnology companies.

This directory provides an excellent resource for biotechnology firms at any funding-stage: Seed, Series A-B, Series C-D, Mezzanine, Bridge, and Buyout. More than 100 VC firms are profiled at over 240 locations. Multiple contacts are included for most firms, with direct contact details, including e-mail addresses. Also included is an index of biotechnology companies with their corresponding VC partners, allowing you to target VCs that are investing in similar companies.

With this directory, you will be able to:

- Pinpoint the firms in Asia that are investing in biotechnology companies;
- Find out if the VC has a specific scientific/technological interest; and
- Learn the stages of investment for each VC (Seed, Bridge, Series A-B, etc.).

Any biotechnology company doing business today must consider itself a global company from day one, and no other region is garnering as much attention for its investment potential as Asia. Navigating a funding search in Asia is a complicated task, which is why the 2008 Asia Pacific Biotechnology VC Directory is a must-have for any company going in that direction.

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# Predicting the future and focusing your innovation programme

<http://www.creative4business.co.uk>

**Derek Cheshire, Creative Business Solutions, UK**

The best way to ensure that your business not only survives, but thrives, is to know what the future holds. Many people profess to do this already but what is it exactly that they are doing?

From existing management information, you might be able to predict the amount of resources required (both human and material) as well as the features of your competitive environment. How far in the future can you do this without resorting to sticking a wetted finger into the air? The answer is probably less than 12 months.

The question is, how far can we look into the future and with what certainty? The answer is anything from 5 to 30 years is possible, and that would certainly help with crafting strategy and changing the direction of even the largest multi-national business if this is required. But how?

Most people are familiar with the passage of a ship on the ocean that leaves a wake behind. By examining the wake and knowing how much time has passed, one or more experts could tell you something about the ship, its speed and course.

Now imagine that you are at the tail end of the wake but you are in the present, the ship is in the future and not visible to you. If you could pick up all of the bits of information that are present, look at the patterns, and have access to experts, then it is possible to gain sufficient information to predict the future for your company.

Predicting the future has developed into a whole new topic known as Futures. Most gurus will use prediction, based on facts, certainty, and giving you answers. It sounds safe but its usefulness over time is limited and it does not deal with the uncertainty of the future. Futures uses a degree of imagination, stories (or scenarios), and a whole lot of questions to rigorously examine the future, and so it can look decades ahead.

Businesses might wish to use Futures to quantify risks and opportunities, craft strategies, inform investment decisions and fuel their innovation programmes. Government and other public sector bodies have broadly similar aims - creating policies, identifying areas for intervention, investment and education needs.

The first stage of a Futures programme is a huge information gathering exercise (remember the analogy of a ship's wake, we need all of this information). At the same time there needs

to be some degree of focus. We cannot just generate the answer to the question "What does the future look like?" A more reasonable question might be "What does the market for personal computers look like in 2020?" or "What will the requirements for transport infrastructure in Wales be in 2025?"

Once these areas have been identified, we then begin to look at the drivers that affect these areas and existing trends that are already apparent. We also look a little further afield and scan the time horizon as far ahead as we can. All the time we gather information, taking care not to filter it too much as the "signals" that we are looking for easily get lost in the "noise" and we never know at the start how much weight (or credibility) to attribute to the information we are gathering.

At this point we have an idea of what we wish to look at and the various factors that might affect it. Now we add the questions, what if oil prices tripled or the population halved, working through a number of scenarios and seeing how this changes the future. Then we throw in the wildcards: Who predicted 9/11 in the USA or the bombings in London? Who foresaw the so-called credit crunch?

And how can we make this tangible at the end of the exercise? There are two main ways of examining strategy, observing the future from the present and working out how to get there, and the most powerful version - which is to look back toward the present from the future and describe how we got here. This is where our storytelling skills come into their own and we generate buy in.

We can predict the future up to 30 years ahead in order to inform strategy making and investment decisions for public and private sector bodies by using:

- Information from expert groups;
- Widely available information;
- A number of carefully chosen scenarios;
- Both existing knowledge and by introducing wildcards; and
- Storytelling and other creative techniques to facilitate information gathering and generating buy in. □

Source: <http://www.innovationtools.com/Articles/EnterpriseDetails.asp?a=333>

# By-product synergy and industrial ecology

<http://www.bsdglobal.com>

International Institute for Sustainable Development, Canada

The principle underlying by-product synergy is that one industry's waste stream can be used by another as a primary resource. It is a simple idea, but one which has enormous potential for reducing waste volumes and toxic emissions to air and water, as well as cutting operating costs.

In order to facilitate an exchange of materials and resources, businesses need to work together to determine what unwanted by-products exist, and what their potential applications are. The resources can then be exchanged, sold, or passed free of charge between sites, creating a by-product synergy.

By-product synergy has been defined by the World Business Council for Sustainable Development and the US Environmental Protection Agency as 'the synergy among diverse industries, agriculture, and communities resulting in profitable conversion of by-products and wastes to resources promoting sustainability'.

By-product synergy is the principle which underpins the concept of 'industrial ecology' - a holistic view of industry in which organizations exchange energy and material between one another, rather than operating as isolated units. Industrial ecology promotes a shift away from traditional open, linear systems towards closed loops and inter-dependent relationships of the kind found in nature.

## The Industrial Ecosystem Development Project

To date, the best known demonstration of industrial ecology is in the Danish industrial town of Kalundborg. However, a recent study by the US Environmental Protection Agency suggests that the potential for exploiting by-product synergies among co-located industries may be substantial.

The aim of the two-year 'Industrial Ecosystem Development Project' was to identify potential by-product partnerships in an industrialized area of North Carolina, encompassing Raleigh, Durham and Chapel Hill. The area identified is much larger than Kalundborg, with a population of around one million,

and is dominated by pharmaceutical, computer, and telecommunications equipment manufacturers.

A target list of 343 facilities was drawn up, all of which were large and had been involved in pollution prevention programmes in the past. All were contacted and invited to take part in the study, and 182 agreed.

A geographic information system (GIS) was used to map the various sites and to record (i) the by-products arising there, and (ii) what inputs they required. The aim was to identify 'matches' between nearby sites.

As a result of this exercise, potential partnerships were proposed for almost half of the 182 sites under investigation. Out of a total of 49 different by-products identified, 12 were deemed viable for short-term partnerships, namely acetone, carbon, desiccant, hydrochloric acid, methanol, packaging, plastic bags, sawdust, sodium hydroxide, wood ash, wood chips and wood fluff.

A further 24 by-products were identified for which partnerships could be developed with further effort, including copper, electricity, floppy disks, glass fibre, ink, plastic and wire.

In one instance, a company which used vermiculite as a packaging material realized that it could use waste sawdust from a furniture shop directly across the street - waste material that would otherwise have been landfilled. In another, it was found that nearly 5,000 truck miles a year could be saved by taking unwanted acetone to a local business that could use it, rather than to a hazardous waste facility 150 miles away.

A report on the two-year experiment, published in the *Journal of Industrial Ecology*, concludes that the main obstacle to industrial ecology is the absence of a 'champion' to bring the various industries together. 'What is lacking in most communities is an agent to promote the vision of a web of materials, water and energy flowing between neighbours, and to gather the local information about by-products available or raw material requirements needed to build this web,' it says. □

## GAPfund

The GVEP International Action Programs Fund (GAPfund) is a small grants programme administered through the World Bank (ESMAP) and managed by Winrock International. The fund supports innovative projects in the field of rural energy services. GVEP International is also working in partnership with Asian Development Bank (ADB) and the Foundation for Development Cooperation (FDC) to improve the lives of the one billion people in Asia and the Pacific currently dependent on wood, kerosene and traditional biomass for cooking, heating and lighting.

For more information, contact:

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# Cleaner production

## Case studies from Pakistan

<http://www.cpc-pak.com>

### Cleaner Production Centre, Sialkot, Pakistan

#### Quality Split Suppliers

##### Background

Quality Split Suppliers is a fully mechanized tannery and has the facility to process garments and gloving leather from Crust leather. Mian Shahid Aziz (Leather Technologist) and the management of the tannery became aware of the environmental problems and started work with the guidance of CPC on CP options. Through process study it came to know that the chemicals applied were not being taken up by the leather. As a result, a lot of chemicals were going into the effluents and the desired quality of leather was not being achieved.

##### Introduction and objectives

In order to improve the chemicals exhaustion and to meet the NEQS M/s Quality, Split Suppliers were suggested by CPC for installation of a Water Heating System. The objectives of the project was to make possible better uptaking of chemicals, reduction of the quantity of fat liquors and dyes and reduction of running time of the drum.

##### Methodology

The activity was successfully accomplished with the CPC assistance on every step to install a Geasure as a water heating system.

##### Assessment

The activity is assessed in the following two categories:

##### Environmental benefits

The environmental benefits of under the CP approach are the following:

1. Reduction in COD, BOD and TDS;
2. Reduction of 1134 kg fat liquors (annually) previously draining to the effluent;
3. Reduction of 54 kg dyestuff previously draining to the effluent; and
4. Reduction of 100 kg of formic acid (annually).

Oil fats inoculates suspended matters form scum on water, hindering sun rays from penetrating down to the bottom of the water and hence affecting living organisms in the water body.

Dye stuff separation from effluent is not only difficult but also cost intensive. Dyestuff reduction at source considerably reduces effluent treatment cost.

##### Financial benefits

The financial benefits of this project are as follows:

Chemicals savings/Lot	= 7.51 kg
Chemicals cost saving per lot (Rs)	= 874.21
Annual production	= 180 Lots
Annual savings (Rs)	= 1,57,358-(180x874.21)
Cost of water heating system installation (Rs)	= 9000
Pay back period	= 21 days

Assessment parameters	Previous	Present
Weight of lot	210 kg	210 kg
Total fat liquor	29.4kg	23.10kg
Cost of fat liquor @ 120 RS/KG	Rs 3528/-	Rs 2772/-
Total dyes used	2.50 kg	2.20 kg
Cost of dyes @ 425 RS/KG	Rs 1062.5/-	Rs 935.0/-
Formic acid	6.30 kg	5.75 kg
Cost of formic acid @ 60 RS/KG	Rs 378/-	Rs 345/-
Running time	130 min	115min
Cost of electricity 7.5 Hp Motor @ Rs 5.5/KWh	Rs 66.76/-	Rs 59.05/-
Fuel charges	00	Rs 50/-
<b>Total cost</b>	<b>Rs 5035.26/-</b>	<b>Rs 4161.05/-</b>

**Conclusion**

Total saving per Lot (Rs)	874.21
Lots per year	180
Yearly saving (Rs)	1,57,358

This shows how useful CP Methodology could be. Some other environmental benefits to the tannery with CPC relation are the following:

The general premises of the tannery are now looking neat and clean and the use of safety equipment was adopted to protect workers.

**A.B Leather**

**Background**

A.B. Leather, which is situated at Ravail Pura, is a semi mechanized tannery. This unit is producing finished leather for garments and gloves from wet blue hides/skins on a job work basis. The average production is fifty lots/annum.

Haji Muhammad Bashir (owner) along with his son Muneeb Raza who is a leather technician took keen interest during the

CP training programme, which was organized by Cleaner Production Centre, Sialkot. They tried to adopt every possible CP technique to protect the environment.

**Methodology**

The management worked on two activities for the reduction of the pollution load.

1. Salt elimination from the re-chroming process; and
2. Construction of the drying chamber for the reduction of fat-liquors and dyes.

It was learned during the CP Training Programme that addition of salt during re-chroming was just increasing the NEQS parameters and there was no need of adding salt during this process. Now M/s A.B Leather has stopped the addition of salt during the re-chroming process. The environmental and financial benefits were collected through a case study, which was carried out in the presence of CPC technical personals. The details are given below.

Description	Lot A with salt	Lot B without salt
Weight of leather	300 kg	300 kg
Percentage of added salt	3.5 %	0 %
Quantity of salt added	10 kg	0 kg
Water added	1500 litre	1500 litre
Quantity of salt discharged	6500 mg/l	0 mg/l

About 500 kg reduction of salt per annum which was going as effluent.

Reduction of TDS, Na & Cl in effluent.

**Construction of the drying chamber**

The second step, which was taken up by the tannery, was the construction of the drying chamber. The benefits were as follows:

**Environmental and financial benefits**

Environmental & financial benefits per annum of 30 lots (their average production is 50 lots but during winter, the drying

chamber does not work).

Fat liquor saving per annum	60 kg
Dyes saving per annum	22.5 kg
Per lot savings	Rs 1,867.50
Annual savings	Rs 1,867.50 x 30
	Rs 56,025.00
Cost involved in construction of drying chamber	Rs 40,000/-
Pay back period	8 months 17 days

Assessment parameters	Previous process	Process for drying chamber
Weight of lot	300 kg	300 kg
Fat liquor added/lot (kg)	60 kg	57 kg
Cost of fat liquor @ Rs110/kg	Rs 6,600.00	Rs 6,270.00
Dye added/lot	10.5 kg	9.75 kgG
Cost of dye @ Rs 250/kg	Rs 2,625.00	Rs 2,437.50
Area increase	0 feet	30 sqft
Sale price of leather @ Rs 45/sqft	Rs 0	Rs 1350.00