Some Venture Success Stories

of

TREC-STEP

Incubating

Inclusive Growth

Tiruchirappalli Regional Engineering College-
Science and Technology Entrepreneurs Park

Scientist to Fledgling Entrepreneur:

Field Scientist to Fledgling Entrepreneur:

Standing on the banks of a small stream, adjacent to the paddy fields, Augustine is in deep contemplation, refusing to be mesmerized by the greenery around him. Having worked in an R & D division in a big fertilizer company for seven long years, he is in a fix now, when the company decided to close down its R & D wing and move him to other areas of operation. His R & D heart, refuses being plummeted to new a low. But, an advertisement in the paper from TREC-STEP, requesting for the innovative ideas to be funded by Department of Scientific and Industrial Research, appeared to be a doubtful light at the end of the tunnel. He wanted to develop his new idea of Neem and Sea algae formulation as an effective soil nutrition and pest management delivery system, to be realized. He decided to visit TREC-STEP to apply for the innovation fund.

At TREC-STEP, hours of discussion with the innovation fund team gave him more hope and he developed his idea for applying for the innovation fund with more rigor. Little did he know, at that time, that his file has been closely studied by the innovation fund team and recommended to the incubation team as a potential candidate for promoting a successful venture. The incubation team at TREC-STEP invited Augustine for a discussion on his proposal. The meeting focused on various potential organic products Augustine has identified and chalked out a strategy for promoting a new innovative venture. A series of interactions with the incubation team, developed a body plan of the venture, for Augustine. Augustine now is convinced that, he has to promote a new venture, based on Neem products with new value adds for crop and pest management. Ideally the base plan of the venture is on extraction of Neem oil and Neem cake and then branches out into formulation and manufacture of a spectrum of specialized products including extraction of Azadirachtin, formulation with Sea Algae, humate and other special components, aiming at niche requirements for organic farming.

Now, as a Scientist, turned innovator, turned entrepreneur, Augustine is putting up a new plant for Neem based value adds. He has already applied for incubation fund support from Technology Development Board and was able to convince the committee for funding his venture. Similarly for another innovative product “Neemate’, a formulation of Neem and Humate, he has won the research grant for field trials, from L-Ramp Foundation of IIT Madras. He has also got research grant from DSIR for his new product idea of Neem-Sea Algae formulation. His venture plan includes a full-fledged lab, which will constantly churn-out Neem value adds and also a production plant for these formulations. The process of establishing a research lab hubbed production unit at TREC-STEP is presently in full swing.

He has secured order for his new product ‘Neemate’, with in new months itself, which has shown tremendous results in organic farming. He is now, busy filling up a container enroute to Colombo and organizing a series of meetings with consulting and marketing group from Boston. His is a new way, research led, venture company, focusing on futuristc organic farming. As an environmental friendly and research led IP company, it is now a born global venture. He is targeting Rs. 20 mln turnover at the end of second year and planning to grow exponentially. As the future beholds great challenges and achievements for him, he is hopeful of bringing in new innovative products, constantly, to the benefit of his customers while also generating many new jobs, tax revenues and investments for future growth in the near future.

Start	Growth 1st Year	Status now	Target after 5 years
Jan. 2007	Turnover Rs. 2.5 mln	At Incubation	Rs. 500 mln

Innova-tion from Core Competency:

Just three months ago, a new company was born, in one of the TREC-STEP nursery incubators called Innova Automation Limited. This venture is promoted by two young first generation entrepreneurs, Pandiyan (26) and his friend Dakshinamoorthy (33). The venture focuses on bringing innovative CNC and CAM manufacturing components with innovative applications in manufacturing.

Five years back, Dakshina, an young employee of Ordinance Factory befriended Pandiyan, a young apprentice and they started to share their common interest in CNC programming for developing new applications in manufacturing. After the apprenticeship Pandiyan went back to Chennai to join a CNC manufacturing company. His company offered him many opportunities to learn new developments, while Dakshina also has been involved in his company, in developing many innovative application wares, for manufacturing. Their interactions progressively became richer with new inputs and experiences gained. Their innovative minds could not find its due share within the constraining boundaries of the corporate place. They decided to start their own company, for innovative CNC applications development in manufacturing. They had very little money, being young and first generation entrepreneurs. Finally, Dakshina could convince his worried, half-hearted parents, to mortgage their ancestral home.

At that point of time, having solved their funding problems initially, their next biggest challenge faced was, finding a place to put-up a CNC manufacturing facility and start their company. Dakshina went in for a intense search, for a place, in the industrial estates, for rent. The three month tiring search went in vain. He could not find a place, finally he came to TREC-STEP to enquire, about a suitable place, for rent, to start his company. Though TREC-STEP constantly discourages rental enquiries for routine type of companies, Dakshina was given a patient hearing. The first discussion gave adequate hints that the new entrepreneurs have a good technical background and rich expertise, specifically in developing CNC application ware. Ensuing discussions with both Dakshina and Pandiyan confirmed this. Both of them had very rich expertise, but they were pitching it in a very low technology domain. In other words, they had very little understanding of their strengths and weaknesses. TREC-STEP, then took-up a series of counseling sessions explaining to them, their core competencies in certain hi-tech domains, but their relative inexperience in scaling up manufacturing and therefore, to strategically define themselves as an innovation led manufacturing venture rather, than a routine CNC manufacturing unit. They were requested to identify atleast two new innovative application ware and develop a venture plan, as a precondition for a nursery incubator allotment. In fifteen days, they came out with two brilliant ideas, for manufacturing a turret disc assembly and a bridge block, a complicated component in a Russian design, for a new army field rifles.

With full support of TREC-STEP, they started their new venture at the TREC-STEP Incubator. A large company approached them for a new application, for manufacturing 8 struded valve assembly, for its US supplier. This large company had failed in its attempts in manufacturing the CNC ware and appropriate tooling and had already paid a penalty of Rs. 1.7 lmln, to the US company. But within a month, Pandiyan and Dakshina developed this 8 strudded valve assembly, to the great relief of the large company. The large company cheered them on their success and is now ready to fund their next CNC facility. Within the first three months of venture promotion, this new success along with many new opportunities planned, as mentioned above, up their sleeves, the promoters of Innova Automation are looking for brighter days ahead.

Start	Growth 1st Year	Status now	Target after 5 years
Feb. 2007	Turnover Rs. 1.5 mln	At Incubation	Rs. 1 bin

Treasure Hunt in Rural Waste Lands:

Panneerselvam is a farmer from Tamilnadu's Ramnad district, one of the driest regions in the country. With its ill reputation for past famines and droughts, the district is dependant on the only possible arid fire wood crop, Juli Flora. Juli Flora popularly known us 'Babool' in Hindi and 'Karuvelam' in Tamil, requires little water and grows abundantly into a thorny bush, providing raw material for charcoal manufacturing and as fire wood. It is a livelihood option for many rural poor in the district. Juli Flora is a common crop in waste lands especially in states like Gujarat Karnataka, Madhya Pradesh and Tamilnadu. After cutting the timber the farmers leave the frail thorny branches and other waste to dry for a period of time and then set it on fire, causing pollution of land and air. This slash and fire system has been the common practice, for years. It was very difficult to collect the wasted thorny branches after securing the timber and firewood from matured Juli Flora growth.

Panneerselvam watched this happening again and again and observed that nearly one third of the growth is wasted in the process also poses a pollution hazard and wondered if some thing could be done for this. He discussed this with his friend Kannappan, a Mechanical engineer, for developing a Juli Flora Cut Waste Harvester. They also observed that the discarded cut waste has a higher calorific value than the fire wood itself, because of the more volatile and high, carbon contents in the thorns. They estimated that around Rs. 50 crores was lying as waste, in their district alone and developed a pulverizer plant, for collecting and pulverizing the Juli Flora cut waste. To provide greater mobility, they mounted it on a tractor. They were able to collect and pulverize this cut waste and sell it to the market. Not only the bio-mass power plants in district, but also boiler manufacturers of Tirupur and the kitchens of major hotels, showed immense interest. The entrepreneurs have already manufactured two tractor mounted pulverizers for Juli Flora Cut Waste Harvesting. They have, through TREC-STEP, applied for DSIR support to get their Harvester certified by Budhni Tractor Research Institute, Madhya Pradesh.

In the mean time, inspired by the entrepreneurs estimate of Rs. 500 mln of cut waste, in a single district, TREC-STEP, wanted to conduct proper survey nation wide for validating the claims and to plan a good marketing and investment strategy for the venture. An Initial survey has brought us closer to the DFID work, done by an UK expert Dr. Dawn Stallard, who then directed TREC-STEP to a French expert on work done on Juli Flora. Dr. Nick Pasiecznik, appreciated the effort of TREC-STEP and the entrepreneur and has directed them to Mettupalayam Forest Research Institute, where he had researched a report on Juli Flora. He had also shown keen interest in buying a Tractor mounted Pulverizer for Juli Flora Cut Waste, for testing in his French Lab and asked for the costs involved. The entrepreneurs, together with TREC-STEP, are in various stages of venture development, including acquisition of funds, certification, scaling up production etc. The venture has immense potential to convert waste into wealth and create job opportunities in the most needed places of our country. Real wealth generation from waste, avoiding a pollution hazard, a new energy source, a livelihood option for many and creation of many job opportunities in drought prone areas, are the real benefits, to accrue beyond this. The high carbon content of thorns has already triggered the interest of the entrepreneurs and new possibilities for utilizing this volatile component is being explored with others. Samples are with the testing labs, for creating yet another flagship venture from a field waste and a real pollution hazard.

Start	Growth 1st Year	Status now	Target after 5 years
June 2007	Turnover Rs. 23 mln	Virtual Incubation	Rs. 500 mln

Vegetarian Silk from Banana Fibres:

Murugan, a young mechanical engineer, has always dreamt of becoming an entrepreneur. Born and brought up at Tuticorin, a major trading port, he could not come out with an inspiring and satisfying venture idea for a long time. However, this only accelerated his appetite for an innovative winning idea.

He observed that Banana Fibres have a shining texture and wondered, if this can replace the rich silk fabric his mother often used. With many trials and errors, with his loyal resourceful mechanic, he developed a crude machine for extracting the banana fibre and also used it in the place of silk yarn and slik zari producing banana silk, an innovative product. He applied for the IIT Madras, L-Ramp Innovation Award and won the award. Learning about innovation fund support of DSIR TREC-STEP Incubation System, he applied for the innovation fund and came into contact with TREC-STEP. TREC-STEP had counseling sessions with him and offered him product development facilities for manufacturing the machine. TREC-STEP, has identified a mentor at National Institute of Technology, Tiruchirappalli, to provide technology assistance. Various strategic options for venturing, like machine manufacture and supply integrated silk zaree manufacturing and silk woven fabric manufacturing, are being explored in detail, with TREC-STEP.

In the mean time, the Chief Minister of Tamilnadu, Mr. M. Karunanidhi, learnt about the Award and the innovative product and summoned him for a discussion. When Murugan entered the Chief Minister's Home he was ushered in by the assistants with great enthusiasm, since the CM has enthusiastically discussed about this with his senior ministers, a day before. The CM was very keen since the product could bring in great benefits to the ailing weaving community, of the state. The CM encouraged the young potential entrepreneur and enquired many details about the product, with keen interest. Then the CM also summoned the Chief of the Department of Handlooms and requested him to provide the budding entrepreneur all necessary assistance, for realizing the venture. The Department then requested Murugan to provide a sample piece of the banana silk fabric for testing. The sample piece was submitted and the department is now preparing a detailed feasibility report for the CM.

In the mean time, the entrepreneur is flooded with orders from various machine manufacturers. With poor IP protection in the country, the entrepreneur is reluctant now to supply machines with just a provisional patent application. TREC-STEP is trying to identify more resource support for IPR, though, already TREC-STEP has facilitated the entrepreneur to apply for IPR protection. However, more efforts are required and envisaged in the next few months, in addition to the home market, the Japanese market has shown great interest for the silk yarn and ready to embrace the product with pride as an eco-friendly organic fabric, biding with the new fashion trend. Parallely, the entrepreneur has worked with a research assistant of National Institute of Fashion Technology and Tirupur Export Association and is developing a sweater garment, for export. Initial results are flowing in and become a towering potential global success of vegetarian silk fabric.

Start	Growth 1st Year	Status now	Target after 5 years
Feb. 2007	Turnover Rs. 2.5 mln	Virtual Incubation	Rs. 500 mln

Student Professor Venture Team:

Ananthakrishnan is discussing with his gardener about developing a new landscapes in his shining new industry campus. Recently, he graduated out of TREC-STEP, bought this land and put up a building, which is one of the best industry in the region serving as a benchmark for all other industries in the region. He is further expanding the building to scale-up the venture, now. He has recently been selected as the President of National Institute of Technology, Tiruchirappalli Alumni Association, one of the rarest recognitions considering the class and clout of NITT Alumni spread all over the world and in many important positions.

Wishing his enthusiastic team with a warm greetings, he climbs his spiral stair case and entered his posh suite. He sees the shop floor through the glass wall. Uniformed workers and supervisors and shining new rows of CNC machining centers were bustling with activity. In a corner of the big production bay, stands an old lathe reminding him again the time he had traversed from a student to a fast growing industrialist, in the region.

Ananthakrishnan, a student, stood out from the general ambience of NITT, never wanting to go abroad, for either employment or for higher studies and wanting to become an entrepreneur always. When he approached his professor Dr. C. R. Kandasamy and informed him of his desire to start an industry, the professor not only motivated him but also directed him to TREC-STEP and plan out his venture with the TREC-STEP team. From there on with professor's inputs and TREC-STEP's support, he developed a series of innovative products in reclamation of ferrous and non-ferrous components. Worn-out components are thrown away and replaced with new ones, though they have immense potential for reuse after due re-manufacturing processes. This would save enormous costs for the companies and is also an environmentally friendly initiative, since energy saving for the society as a whole is substantial. What is needed is optimized, specifically tailor made, cost effective reclamation technology packages. There were many challenges to develop new technologies in this field, from many fronts, apart from the financial scale-up and HR challenges. The core technology problem itself had to be addressed, innovatively. The professor and the student team, constantly turned out new technology innovations and made a successful spectrum of technologies, for reclamation of various components such as cane-carriers links, king-pins for foundries, automotive gears, textile spindles, crank shafts, cam shafts, mud buckets for mines etc. All of them had intrinsic technological issues to be addressed and Anathakrishnan and the professor utilized the Central Workshop facilities of TREC-STEP, intensively, for churning out these new reclamation technologies. Finally they zeroed in on cam shafts, which became his main forte. Indian Railways was in dire need of cam shafts and Ananthakrishnan's venture became the cynosure of Indian Railways. He was always seen as a new technology innovation source for Railways, who used him for many new product ventures.

Three years back, in 2004, when railways went in for a major technology upgradation, of converting the existing 2600 hp engines to 3300 hp engines by changing the cam shafts to stiffer unit cam shafts, according to the Research, Design and Standards Organization, Lucknow, they went for a global tender. Many reputed multinationals including General Electric – Transportation Systems, MTS-France and others participated. Ananthakrishnan was L2, with the second best lowest offer and a Chinese firm was the lowest. Trial orders were placed at the Chinese quoted rates, on Ananthakrishnan and the Chinese firm. The Chinese firm never turned-up, but Ananthakrishnan not only supplied on time, but also brought out many subtle design mistakes which enabled Railways to change their original design with help of Ananthakrishnan's knowledge team. Even now, he works closely with NITT faculty on many technologies and is the main flag bearer for TREC-STEP's cause. He is a messenger, mentor and model for the next generation entrepreneurs and willingly engages in incubating new entrepreneurs, though he is growing at an exploding pace.

Start	Growth 1st Year	Status now	Turnover now	Target after 5 years
1994	Rs. 0.3 mln	Graduated out	Rs. 80 mln	Rs. 6 bln

One Man to an Army of Monopoly:

Shankarraj, a mechanical engineer, was a young executive in a surface coating company prior to becoming a lecturer in an engineering college. During a casual conversation, one of his friends, appreciating his innovative and entrepreneurial drive, informed him about TREC-STEP and its interesting incubation programme. Shankarraj came down from Chennai to attend the six weeks residential Entrepreneurship Development Programme offered by TREC-STEP. The programme intensified his venturing personality and provided invaluable clues to start his own venture. Shankarraj identified three to four strategic options and was provided incubation support at TREC-STEP.

The common machining facility center at TREC-STEP, had a spectrum of all general purpose machines and was utilized for the product development needs of incubatee entrepreneurs. There was spare time available during the night shifts and also with certain types of facilities, required only occasionally. TREC-STEP requested Shankarraj to utilize these spare capacities and enabled him to approach the R & D divisions of major companies of the region. Working with the R & D teams of various companies, Shankarraj, developed many innovative machining solutions for the R & D requirements. Some of them included unique fuel injector nozzles for a magneto hydro dynamics project, hot mill guide roller's re-profiling and various intrinsic precision components for R & D applications. Finally, he identified a niche segment in test specimen preparation, for boiler manufacturing units. It is worth mentioning, during the Kargil war, when the ordinance factory at Trichy, was looking for industry support for some package rectification works for its bullet carriers, Shankarraj volunteered, even though it was less remunerative and placed far apart from his regular knowledge intensive manufacturing process, to help them.

Trichy region is one of the global hubs for energy equipment manufacture. World class welding skills are available and the quantum and quality of welding, is of the highest order. Various types of welding, applications in welding technologies, welded components, etc is a core competency of the region. The high level of welding activities also require very comprehensive testing requirements as per national and international standards, since welding is a special processe. The properties of weldments are not qualifiable hence cannot be easily tested and validated by simple test procedures. Since the applications of weldments are also in high pressure situations, the testing procedures for manufacture, is more complicated than the manufacturing process itself. This requires complex protocols for testing, necessitating unique test specimens as per ASME and other testing standards. Preparing complex test specimens and supplying them on-time is a major bottle neck for all the boiler manufacturers of the region. This was the golden niche awaiting Shankarraj, but provided a tall, knowledge and innovation challenge. Shankarraj developed unique methods and immense knowledge base for test specimen requirements and their manufacture. He became an expert in test specimen preparation by solely focusing on this area and acquiring skills and knowledge with unparalleled accuracy and uncanny innovative manufacturing applications. Today, his team is the only monopoly in this area. BHEL, Trichy's central laboratory which has 10 times more facilities and more experienced team could not match the performance of the young venture. The outputs of Shankarraj and his team was atleast five times cheaper and three times greater in volume, when compared to the number one test specimen facility of BHEL. There is need to benchmark to other boiler manufacturers, who have lower positions, compared to BHEL. BHEL was forced to close the central lab's test specimen preparation facility, encouraged and motivated by the excellent performance of the young venture.

Shankarraj graduated out of TREC-STEP and established a model industry for test specimen preparation. It is a unique industry not only in the region, but also in the nation. He is an active mentor in TREC-STEP's incubation team and willingly contributes to the coaching of young potential entrepreneurs. Apart from this, Shankarraj, also speer headed one of the most innovative technology development projects of TREC-STEP, in converting the ailing Nilagiri Mountain Railway locomotives from Coal firing to Oil firing. This preserved the UN heritage train and won the best innovation award for TREC-STEP from Indian Railway board

Start	Growth 1st Year	Status now	Turnover now	Target after 5 years
1994	Rs. 0.5 mln.	Graduated out	Rs. 25 mln	Rs. 500 mln

Electronic Migration and Evolution:

Shanmugavel was a young instrumentation engineer, who graduated from University of Roorkee. After a start stint at a large petro-chemical industry at the Gulf he came back wondering if he could start his own venture. His wife Vijayalakshmi is a mechanical engineer and both of them came to TREC-STEP and attended the Entrepreneurship Development Programme. This training, the innovative ambience at TREC-STEP and linkages developed with the parent institution NITT and the neighboring public sector unit, gave them adequate confidence to go on a hunt for innovative opportunites in hi-tech areas. They could identify a series of instruments import4ed by BHEL, Trichy, from foreign sources, as a potential opportunity for re-engineering them internally. They called themselves as 'import substitution people' and named their venture 'Essen Instrumentation'. Flame scanners which constantly monitor the fire balls in mega power boilers was one of their key technology development projects. These flame scanners were imported from the US and other developed countries, at a phenomenal cost. Both, for new components and spares for maintenance, BHEL had to buy these items in bulk, thus bleeding valuable foreign exchange for the company and the nation. The Shanmugavels successfully indigenized 85 to 90% of flame scanners, requiring only 10 to 15% components from abroad. Thus they could bring down the cost substantially to 30% of the original import cost. BHEL was extremely happy and went on to indigenize and develop new products through this incubatee venture of TREC-STEP. Simultaneously, Shanmugavel and Vijayalakshmi developed many new items for the open market, also utilizing the facilities and expertise of NIT Trichy and TREC-STEP. However, the flame scanner venture remained and still remains, the most lucrative business for them.

At each stage of their venture, they closely worked with TREC-STEP in developing suitable strategies for networking competency development, Incubation support of others and training students in the electronic field. The husband and wife team was also highly gender sensitive and generated many job opportunities for women in engineering areas.

Having developed flame scanners, igniters etc the venture has become a monopoly in the niche area of electronic support systems for high pressure boilers. As a smart venture, soon, the venture was able to generate adequate investments for development and compelled the entrepreneurs to look for new opportunities. Shanmugavel identified and analyzed closely many opportunities and took some of them for trail venturing. Finally he came the conclusion that medical electronics was the most suitable and satisfying area of operation. This was motivated by the fact that the region needed a hi-tech medical instrumentation support facility, for the hospitals. He chose MRI scan, 64 slice CT and other comprehensive medical scan systems, for not only being a good proposition but also a great opportunity to serve the local community. From a boiler flame scanner, he has now promoted a team of medical professionals and facilities for scanning and providing support for curing ailments and reducing human suffering. His has the best medical facility, available 24 X 7, for the local community, while, the original flame scanner venture has constantly upgraded to new type of scanners and is doing an extremely good business. The migration of an employee to entrepreneurship and subsequent evolution into a socially responsible entrepreneurial venture is indeed a inspiration for many new young entrepreneurs.

Start	Growth 1st Year	Status now	Turnover now	Target after 5 years
1994	Rs. 0.5 mln	Graduated out	Rs. 100 mln.	Rs. 500 mln

Intelligent Design for Success:

Harish Rangacharya was a young post graduate civil engineer from IIT Madras, when he came to know about TREC-STEP. He applied for the six week residential Entrepreneurship Development Programme of TREC-STEP and got selected. In 1989-90 he attended this ED Programme which inspired him and provided him invaluable inputs in promoting new ventures, particularly he was highly motivated by the Achievement Motivation Trainer. He started his small IT venture in the pre –IT era. Being a first generation entrepreneur in the pre-IT era, he pitched his IT venture expecting a niche in providing CAD support for architects and civil engineers. He mortgaged his ancestral home and borrowed a loan from his sister, for putting up his new venture in information technology business. Hoping that there was a great potential for preparing building plans with CAD, he went about enthusiastically marketing his venture among architects, civil engineers and others. However, this niche market never opened up and he was compelled to convert his facilities to train people in CAD skills. In those days, sailing ahead of his times, his target customer segment of potential engineering students, turned out to be a mirage. IT was yet to be born, but many working executives of public works departments and other large companies attended his training programmes and worked with him for converting their structural drawings into CAD documents. This helped Harish and his team to develop rich expertise in this new technology area.

In one of IT Conferences, Harish met his partner, a senior executive who was working in US and looking for young Indian talent to partner with him to explore new US markets. After a couple of small orders from US, the partners were able to clinch a new deal with major electric company at the US for digitizing their power cabling layout. They were able to satisfy their customer requirements and also faced a great challenge in rectifying the new upgrades. The challenge was a compelling requirement for the US customer. Every time a transformer or any other equipment was upgraded, all the lines and the entire drawing had to successfully accommodate and reflect this. This was a cumbersome process and required intensive labour. Harish, then got the idea for intelligent drawing, which once digitized shall automatically reflect and redo any upgradation carried out in any component of the drawing. The idea was a born winner and delighted the customer. The operation expanded. Harish's was one of the first knowledge process outsourcing centers of the country. He soon bought a company at the US and now employs around 700 engineers. He also works for London Times for digitizing their magazine. He also won the ***Bharti Best Entrepreneur Award*** instituted by the Entrepreneurship Development Institute of India, Ahemedabad in the year 2003.

He has trained a batch of street urchins and visually challenged persons as data entry operators and provided them quality livelihoods as a part of his corporate social responsibility. The other part of the corporate social responsibility he has assumed, is to act as mentor for any of TREC-STEP's young incubatees and participates in all of TREC-STEP's events at his own cost and valuable time. Till this day, he feels that TREC-STEP is mainly responsible for his success and wants to contribute as much as he can to TREC-STEP's mission.

Start	Growth 1st Year	Status now	Turnover now	Target after 5 years
1993	Rs. 0.3 mln	Graduated out	Rs. 150 mln	Rs. 1000 mln