A CUT ABOVE THE REST
Design Opportunity analysis of the Baruipur Surgical Cluster

MSME DESIGNCLINIC SCHEME, GOVERNMENT OF INDIA
& NATIONAL INSTITUTE OF DESIGN
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As a part of phase 2, a need assessment survey of 20 units in the Baruipur cluster, West Bengal, India was conducted between 17th - 23rd November 2011. This report summarizes the findings of the NAS attempting to identify the design opportunities, which would help in the upgradation of the cluster.

Design Clinic Scheme for design expertise to MSMEs (Micro, Small and Medium scale Enterprises), a unique and ambitious design intervention scheme for the country's industrial growth is an initiative of Ministry of MSME, Government of India that has been launched under National Manufacturing Competitiveness programme. Design Clinic Scheme will help MSMEs to develop product/process/business expertise through design intervention at multiple level interactions.

Design sensitization seminars (Phase 1), need assessment surveys & design awareness programme (Phase 2) and design projects (Phase 3) will help MSMEs in various stages to develop competitiveness.
My deepest acknowledgements to all the people who contributed and facilitated the need assessment survey at Baruipur.

My sincere thanks to:

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Chairperson, MSME Designclinics, NID
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Baruipur Surgical Manufacturer’s Association (BASIMAA)
Officials at the Common Facility Centre, Baruipur

Design Clinic Scheme for Design Expertise to MSMEs, a unique and ambitious design intervention scheme for the country’s large micro, small and medium scale enterprises, is an initiative of Ministry of MSME, Government of India has been launched under National Manufacturing Competitiveness programme.

The main objective of the Design Clinic Scheme is to bring MSME sector and design expertise into a common platform and to provide expert advice and solutions on real-time design problems, resulting in continuous improvement and value addition for existing products. This model brings design exposure to the door step of industry clusters for design awareness, improvement, evaluation, analysis and design related intervention. Design clinic scheme will assist industrial clusters to open a channel for design information inflow for creative, innovative and futuristic approach towards the product, process, operations, manufacturing and business design. The scheme will help generate insights for opportunity identification and design intervention for competitive and breakthrough solutions for MSMEs.

The National Institute of Design, Ahmedabad has been setup as the nodal agency for the scheme. With its rich experience in design training and consultancy, NID will act as matchmaker to the MSMEs and design professionals. It shall also administer effective implementation of the plan.
The National Institute of Design (NID) is internationally acclaimed as one of the foremost multidisciplinary institutions in the field of design education and research. The Business Week, USA has listed NID as one of the top 25 European & Asian programmes in the world. The institute functions as an autonomous body under the department of Industrial Policy & Promotion, Ministry of Commerce & Industry, Government of India. NID is recognised by the Department of Scientific & Industrial Research (DSIR) under Ministry of Science & Technology, Government of India, as a scientific and industrial design research organisation.

NID has been a pioneer in industrial design education after Bauhaus and Ulm in Germany and is known for its pursuit of design excellence to make Designed in India, Made for the World a reality. NID’s graduates have made a mark in key sectors of commerce, industry and social development by taking role of catalysts and through thought leadership.
Eminent medical historian John Kirkup argues that fingers, nails and the mouth were the earliest surgical tools, used by prehistoric humans to remove foreign objects from wounds. Surgical instruments have evolved over millennia, as humans have discovered new materials for tool making. Early humans used objects such as bones, ivory, bamboo and stones to remove thorns and arrows from wounds.

Primitive stone knives, used for ritual surgeries such as circumcision and trepanation, appeared as early as 10,000 BC. Discovery of copper and bronze in 4000 BC revolutionized the weapons and tools industry, leading to stronger, lighter and better equipment. Moller-Christensen believes that the first copper tweezers appeared in Egypt in 3300 BC.

The first recorded period in history is AD 97, where definitive instrumentation was described and illustrated in the physician’s houses of Pompeii, Italy. Classical surgeons used forceps, scissors, speculum and other instruments made from iron, bronze or gold, which they believed had healing properties. From the 17th century to the 19th century, new anatomical knowledge led to the development of tools with specialized functions, including bone drills and saws, lancets for bleeding and forceps. Steel and nickel-plated instruments became common.
The earliest historical records show that medicine men of the 17th century kept lancets and cannula with suturing needles in a convenient pocket; along with plaster box for bandages, razors, salves and ointments. As the different types of surgical instruments increased, carved wooden boxes or leather covered wooden boxes with velvet lining with instrument depressions became popular. Also, complete kits for special surgeries emerged for lithotomy, dentistry, eye surgery etc. Although iron was discovered in 1500 BC, bronze was still a first choice and it phased out very slowly. Iron was exclusively used for blades, saws and others. During the middle ages, iron replaced bronze completely. Corrosion dogged steel throughout 19th century but steam sterilization, nickel plating and chroming reduced the corrosion related issues.

Discovery of stainless steel ended the problems altogether and was introduced by Doven Brothers, England in 1918. Stainless steel made surgical instruments cleaner and safer. Rubber tubes and catheters emerged in the 1960s. More recent developments include the use of titanium and disposable blades.
PRODUCTION PROCESS

Before a surgeon holds the scalpel in his hand, the instrument undergoes several processes. Blocks of stainless steel are cast in the steelworks and rolled into manageable profiles and semi-finished rods in a steel mill. The half-finished rods are cut to the length of the desired instrument. The rod is heated until the material glows (about 900°C) and inserted into the die for forging. The die is a two-compartment tool into which the shape of the blank is reamed or eroded. In the lower section of the die is attached to the drop hammer bench, while the upper section is connected to the lower part of the drop hammer – also called the bear. The drop hammer nose rebounds with great force on the glowing material and presses it into the reamed shape. This process is called “die forging”. The die-forging process is repeated in order to stamp the shape of the blank as precisely as possible. The material thickens considerably under the distortion force.

Unintentional hardening occurs during the cooling phase. In this state, further processing would be impossible, so the blank is reheated at a temperature of about 800°C. The temperature is maintained for 1.5 hours. The subsequent cooling phase lasts about 6-8 hours. The red hot process is required to remove
Tension from the material and reduce the hardness. In subsequent production processes, an excessively hard blank would result in the premature wear and tear of the processing tools.

In automated factory lines, advanced CNC & milling machines are used to trim the ridges around the shaped blank. In manual lines such as Baruipur, the blanks are trimmed manually using various grades of grinding wheels and belts.

Once precisely shaped, the instrument is heated slowly to a temperature of 1000º C in an automated hardening machine. This is carried out under a blanket of nitrogen. Nitrogen is a gas with very low reactivity and does not react with the heated steel even at high temperatures. The instrument remains metallically pure. If the blanket of nitrogen were to be replaced by oxygen, a scale layer would form on the instrument. This would be extremely difficult to remove at a later stage and could lead to corrosion during subsequent use. A temperature of 1000º C is maintained until the instrument is completely heated through. The instrument is subject to shock-type cooling (at 700º C). The steel structure and hence the properties of the instrument are modified during the cooling process. Once the instrument has hardened, it is further heat-treated. This process is called annealing. The previously achieved hardness and brittleness of the needle holder is now transformed into elasticity and toughness. Furthermore, annealing rids the material of tension, which would subsequently result in loss of function. After annealing, the needle holder is light brown in colour - this is also referred to as the annealing colour.

Surface precision work is carried out after heat treatment. This initially involves polishing. The projecting edges of the instrument are ground to the desired shape and size using grinding wheels of several grades. The surface is manually polished and buffed of instruments.
refined by brightening (polishing). Particular caution must be exercised in this respect, because improper polishing would distort the shape of the instrument. The surface condition is then inspected.

After this processing phase, the instrument is washed in an ultrasound tank to remove dirt particles. The instrument is now electropolished in order to finally seal the surface. Electropolishing is an electrochemical process whereby microscopically small uneven areas are levelled out. Those areas not reached during mechanical processing are smoothed and any oxidation residue is removed. This working process is one of the most important stages in addition to instrument hardening, particularly in terms of protection against corrosion.

If the instrument has a tungsten carbide insert, certain parts are galvanically gold-plated. The golden rings are indicative of tungsten carbide inserts on the working end of the instrument. As the materials used in the instrument are all highly precious metals, pure gold is used for plating purposes. The generation of an electrochemical series is thus prevented during subsequent use and especially during instrument preparation. This, in turn, prevents corrosion.

The currently standard, mate surface of the instrument is achieved by sandblasting or mate- brushing. In the case of sandblasting, the polished surface of the instrument becomes dented through bombardment with microscopically small glass beads and is thus rendered matt. Despite every effort to automate the manufacture of surgical instruments, the manual skills of the surgical mechanic are crucial.
GLOBAL PRODUCERS

TUSSLINGEN, GERMANY

Tuttlingen is a town in Baden-Württemberg, capital of the district Tuttlingen. Nossingen, Möhringen and Ellingen are three former municipalities that belong to Tuttlingen.

In the 1700s, the initial clustering of surgical instrument production was a result of specific location factors that provided beneficial geographical resources, such as iron-ore and wood around Tuttlingen and transportation along the river Danube. The first product specialisation of these metal-based firms was in nail and knife forging. The move from nails to surgical instruments came out of the superior performance of Solingen, forcing Tuttlingen to seek its own market niches. Gottfried Jetter, who in 1867 founded Tuttlingen’s current leading firm in medical engineering, Aesculap, took the initial steps towards specialisation and introduced modern machines such as steam engines. In subsequent years, other firms followed, pooling know-how from all over Europe, especially Paris, which was then the world’s leading centre of medical knowledge and surgical instruments. Soon after the beginning of the 20th Century, the increasing number of instrument types led to further specialisation, enabling craftsmen to reduce the production time of each single instrument and obtain economies of scale.
Major suppliers of surgical tools

Major Consumers of surgical tools

Brazil
Australia
UAE
United States of America
United Kingdom
Germany
France
Italy
Japan
Baruipur, India
China
Tuttlingen, Germany
Sialkot, Pakistan

of scale (Gerhard Halder, 2002).

Today Tuttlingen has many businesses and considerable industry and is the home for more than 250 surgical equipment companies, including Karl Storz GmbH, Araculap, Hettich Centrifuges, HLS Martin and Instrumental Inc. Fifty percent of the world’s surgical equipment is manufactured in this town. About 150 manufacturers and sales companies show their products and services in the permanent exhibition of surgical instruments and medical appliances, called ACS, on more than 500 sqm. Including an exhibition of historical surgical instrumentry, the exhibition is opened during the whole year.

SIALKOT, PAKISTAN

Surgical industry of Pakistan holds a history of more than 100 years, when British doctors got their surgical instruments repaired from the skilled workers of Sialkot. The sector manufactures a wide range of medical, surgical and veterinary instruments exporting more than 95%, which includes 80% of disposable and 20% of reusable surgical instruments, of its production annually. It exports to over 140 countries.

The surgical instrument manufacturing started in Sialkot at the turn of the 19th century, when the American Mission Hospital in Sialkot initially got its scalpels and other instruments repaired from the local artisan community of blacksmiths. These craftsmen successfully replicated these imported instruments, which were being used by the hospitals. When Sialkot industry started exporting surgical instruments, for the improvement of instruments, British Government established the Metal Industries Development Centre (MIDC) in 1941. After 1947, Sialkot inherited total of 17 registered surgical instruments manufacturers.
In 1958, Surgical Instrument Manufacturers Association of Pakistan (SIMAP) was incorporated as a representative body of the exporters and manufacturers of surgical industry, to safeguard the interest of the industry.

Today, Sialkot in Pakistan is considered to be one of the biggest cluster suppliers of surgical instruments to the medical industry across the world. With the world market for Surgical Instruments is over US $ 30 billion, Pakistan's exports currently stands at US$25 Million during 2009-10. The Total Capital Investment in the surgical Industry is estimated at Pakistani Rupee 20 Billion. There are about 5000 to 10000 active small and medium surgical units with labour force ranging from (10-500). The industry association estimates the number of workers in the surgical Industry is about 500,000. The industry manufactures about 150 Million instruments pieces annually (www.simap.org.pk).

Pakistan main manufactures two types of surgical instruments:
- Disposable instruments, which constitutes 80% of exports
- Reusable instruments, which forms 19% of exports
- Advanced devices, which forms 1% of exports

Top buyers for instruments from Pakistan during FY 2009-10 were:
- United States US$: 57 Million
- Germany US$: 34 Million
- United Kingdom US$: 24 Million
- France US$: 19 Million
- Brazil US$: 08 Million
- Italy US$: 07 Million
- Japan US$: 06 Million

Australia US$: 05 Million
UAE US$: 05 Million
Mexico US$: 04 Million

BARUIPUR, WEST BENGAL, INDIA

The story of the Baruipur cluster dates back to 1937, when a few Karmakars (blacksmith) like Pawan Karmakar, Gaur Karmakar and Nitai Karmakar adopted the business of manufacturing surgical instruments at Baruipur. Expertise was passed on from one generation to the next. The units specialise in surgical instruments for orthopaedics, ENT, laparoscopy and others. Many are engaged in forging at a nearby village in Balakhali, while another 350 are into finishing and polishing these instruments at Baruipur. In the 1980s, Paul Instruments, one of the larger units at Baruipur exported its first consignment of instruments to the US. From then onwards, a small number of instruments are supplied to international clients either directly or through traders in countries like the USA, the UK, Bangladesh, Nepal and Bhutan by some units that are relatively larger in size. Exporting units typically employ 50-55 individuals, while the majority of these units are small employing one to four people.

In the domestic market, these instruments are sold primarily in the wholesale markets in Central Avenue, Kolkata and Chandni Chowk in Delhi. Turnover for the entire area ranges from Rs 8-10 crore, while exports would be about INR 1 - 1.5 crore (Economic Times, 23.05.2006).
BARUIPUR

Baruipur is a city and a municipality in South 24 Parganas district in the state of West Bengal, India. Baruipur is 25 km from Sealdah Station. Baruipur is located at 22.35°N 88.44°E. It has an average elevation of 9 metres (29 feet).

As of 2001 India census,[2] Baruipur had a population of 44,964. Males constitute 51% of the population and females 49%. Baruipur has an average literacy rate of 84%, higher than the national average of 59.5%; with 52% of the literates being male and 48% being female. Baruipur is well served by both railways and roadways. The nearest railway station is Baruipur Junction.

The gajan utsab of Baruipur is famous. According to local legend, there was once a severely contested lathi fight between the lathials of the Sabarna Choudhurys of Barisa and the Roy Choudhurys of Baruipur concerning the boundary dispute of their respective Zamindaris. The Sardar of the lathials of the Sabarna Roy Choudhury was Bhriguram. The lathials of Baruipur managed to cut off his head with a sword and win the fight. However, Bhriguram was so much respected in the area that a lock of his hair was preserved. Bhriguram is still publicly honoured by the exposition of his hair during the gajan melas at Baruipur.

Baruipur has a surgical tools industry efforts which are now on to ensure a revival. Baruipur is known for its fruits, with significant production.

Most religions coexist at Baruipur, with predominantly Hindus and Muslims forming the majority.
NEED ASSESSMENT

The NAS (Need Assessment Survey) was conducted between November 23 - 30, 2011. The exercise covered 17 small scale units. The NAS focussed on collecting information about the manufacturing practices, problems and issues that the units face. Data collection methods include literature survey, personal interviews, photo documentation, videography and focus group discussions.

The objective of the information collection was to identify specific design opportunities that would help in the revival of the cluster.

The NAS focussed on 4 major data collection topics:

PROCUREMENT
Materials, grades, finishes, quality, Costing, Availability, Issues

PRODUCTION
Human resources, production planning and Control, PPC, manufacturing processes, issues

DESIGN
Knowledge management, international design standards, ergonomics, New product development

SALES
Branding, marketing methods, promotions, packaging
AMINA SURGICALS

Baruipur, Kolkata 000000 India
Contact person: Daiyen Naskar
Type of firm: Unregistered, proprietor based
Established in: [missing]
Main product mix: Scissors & forceps
Number of employees: 10
Annual turnover: INR 18,00,000 (18 lacs)

PROCUREMENT
Steel consumed
Grades of stainless steel used: 410 & 420
Raw material vendor: Mukund Steels

PRODUCTION
Annual production: 50,000
Types manufactured: 200 types of scissors
Speciality areas: Scissors & Atari/Musquito forceps
Number of employees: 10
Average wages paid: INR 2000 - 5000

DESIGN
In house design capabilities: tacit knowledge, no formal mechanism
Database of designs: Drawings given by dealers, no access
Access to user information and feedback: None
Product Development: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers
Branding & promotion: None
Packaging: Unmarked boxes, rebranded by dealer
Web presence: None

STRENGTHS
Daiyen Naskar is well known and renowned for the quality of scissors and forceps he produces. Mihir has also branched out into fishing products such as tackles and hooks as they are also made from stainless steel of similar grade.

WEAKNESSES
Dependent on dealer network to a large extent. He cannot afford a marketing team. He has attempted it, but production quality completely suffered in his absence. He had to give up marketing to focus on quality and production.

THREATS
Daiyen's local branding as a good scissor maker would be completely lost in time if he is not known beyond the boundaries of Baruipur. Threats include other units, Jallandhur, Chennai, Mumbai and imports from Sialkot, Pakistan.

OPPORTUNITIES
Daiyen could capitalize on his name as a scissor maker of repute. He should also look at similar product mix (horizontal expansion) or develop high value, high technology cutting equipment (vertical expansion).
Material management issues during storage and despatch
Unclean & disorganised surroundings
Unorganised workspaces & non-ergonomic workdesks

Design Opportunities Matrix
APEXO SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Proshonta Das
Type of firm: Proprietorship
Established in:
Main product mix: Theatre Instruments
Number of employees: 3
Annual turnover: INR 900,000

PROCUREMENT
Steel consumed
Grades of stainless steel used: 410, 420
Raw material purchased from: Mukund Steel, Baruipur

PRODUCTION
Annual production: 8000
Types manufactured
Speciality areas: Dental, Diet plastic, surgery instruments
Number of employees: 3
Average wages paid: INR 200 per day

DESIGN
In house design capabilities: None
Database of designs: Down Brothers Catalogue
Access to user information and feedback: None

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers in Bihar, Gujarat, Orissa, Bengal
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
Being smaller gives nimbleness to Apexo, which could render a long term advantage in changes in product mix. Experimentation with new designs, finishes and textures could be done faster as compared to bigger companies with product lines.

WEAKNESSES
Dependency on manual forging render Apexo completely vulnerable to supply issues. Coupled with low quality steel, sometimes fake, Apexo has to deal with low manpower availability and inability to pay skilled workers.

THREATS
Since Apexo is a small player in the segment, it is vulnerable to changes in the demand supply equation in the markets. Rising competition from Punjab cluster and instruments from Pakistan further render the situation critical. Inability to design new instruments and lack of contact with doctors and user groups is also an important factor.

OPPORTUNITIES
Apexo could adopt two different approaches - one, to build core competency in general theatre instruments by introducing quality systems, finishes and inserts. The other option would be to look at a steady diversion into low volume - high value specialist instruments such as endoscopes and laparoscopy instruments.
Ergonomic posture and bad lighting conditions
Unclean & disorganised surroundings, lack of organised workstations
Unorganised work conditions, leading to several long term health issues

DESIGN OPPORTUNITIES MATRIX
BARUIPUR SURGICALS

BARUIPUR, Kolkata 000000 India
Contact person: Himangshu Das
Type of firm: Unregistered, proprietor & son
Established in:
Main product mix: Surgical instruments
Number of employees: 9
Annual turnover: INR 12,00,000 (12 lacs)

PROCUREMENT
Steel consumed 1200 Kg
Grades of stainless steel used: SS 410 / 420
Raw material purchased from: Mukund Steel, Baruipur

PRODUCTION
Annual production: 6000 Pcs
Types manufactured: General surgery instruments
Speciality areas: Dental / orthodontic instruments
Number of employees: 9
Average wages paid:

DESIGN
In house design capabilities: Minimal
Database of designs:
Access to user information and feedback (Doctors' feedback)

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealer network
Branding & promotion: Logo, basic packaging
Packaging: Printed plastic sleeves
Web presence: None

STRENGTHS
Dental surgery equipment

WEAKNESSES
Lack of exposure to clients, hospitals and other routes of marketing
Partially dependent on the dealer network that exploits them
Unavailability of micro finance prevents them from marketing
Deterioration of quality in hand forged blanks
Steel of inferior quality - corrosion faced in instruments

THREATS
From Sialkot made instruments
Lack of information about new developments in surgery
Dependence on dealer network

OPPORTUNITIES
Product diversification into other instruments
Development of new & advanced tools for exports
Development of brand through strategic inputs
Web / online presence
Lack of illumination within workshop leads to back injuries.

Cramped work places lead to back injuries.

Low lighting & non-ergonomic work stations.

Lack of illumination within workshop leads to back injuries.

Cramped work places lead to back injuries.

Low lighting & non-ergonomic work stations.
CALBER SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Kamal Das
Type of firm: Registered, proprietorship
Established in:
Main product mix: Theatre instruments
Number of employees: Annual turnover:

PROCUREMENT
Steel consumed: 800 kilos per annum
Grades of stainless steel used: 410 / 420 / 316 (implants)
Raw material purchased from: Mukund Steels, Mumbai

PRODUCTION
Annual production: 50,000 pieces
Types manufactured: 800 types
Speciality areas: ENT / Ophthalmic / Micro / Cardio / Neurosurgical
Number of employees:
Average wages paid:

DESIGN
In house design capabilities: None
New Product Development: None
Database of designs: Samples from dealers, drawings, catalogues
Access to user information and feedback: Through doctors

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers, direct sales, conferences
Branding & promotion: Partial
Packaging: None
Web presence: Through sister concern (Paul Instruments)
Exports: Through sister concern (Paul Instruments)

STRENGTHS
One of the key established companies in the cluster
Exports through sister concern - Paul Instruments India
Active in association & governing body of cluster

WEAKNESSES
Rusting is seen in instruments within 2 years.
Hand forged blanks – no control over thicknesses
Productivity less, costs are rising
Rejection by self-evaluation + client’s rejections: 30%

THREATS
No ergonomics data / understanding
No self initiated new product development
Stiff Chinese competition in coming years
Sialkot, Pakistan as a main competitor

OPPORTUNITIES
Product diversification
Brand development
Lack of ergonomic workstations

Cramped work places lead to injuries

Rust of instruments is extremely common, a huge health issue

DESIGN OPPORTUNITIES MATRIX
CHATTERJEE SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Chatterjee
Type of firm: Trading & manufacturing
Established in: 
Main product mix: 
Number of employees: 
Annual turnover: 

PROCUREMENT
Steel consumed: 
Grades of stainless steel used: 
Raw material purchased from:

PRODUCTION
Annual production: 
Types manufactured: 
Speciality areas: 
Number of employees: 100 + 
Average wages paid:

DESIGN
In house design capabilities: No 
Database of designs: Yes 
Access to user information and feedback: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: Trade fairs, institutions, sub dealers 
Branding & promotion: Yes 
Packaging: Custom designed 
Web presence: Website

STRENGTHS
One of the biggest dealers in Baruipur. Chatterjee has tremendous contacts with institutions, clients, and sub dealers across India. Chatterjee surgicals is widely exposed to the trends and design issues in surgical instruments. The firm is financially secure and has databases of international catalogues. Chatterjee uses vendor management practices - provides training, manpower, material and finance to vendors, in return for complete Participates in trade fairs actively. Chatterjee is a member of Jallandhar cluster as well.

WEAKNESSES
Still depends on manual forging for blanks. The quantity of production / supply is affected because of manual forging. Manual forging sector is affected because of low income. Forge workers prefer to work as casual labour.

THREATS
Dealers of similar size in Jallandhar, Chennai and Mumbai clusters such as Appaswamy surgicals. Lack of trust and accusations of monopoly by other units in Baruipur is prevalent.

OPPORTUNITIES
Chatterjee surgicals could look at leading an effort at combined marketing. Given Chatterjee’s financial strength and reach, a formal marketing network promotion can be initiated. An e-portal offering various types of instruments can be initiated which would increase visibility. New product development (NPD) with advanced surgical capabilities can be initiated for exports.
CROSSLAND INTERNATIONAL

22555, Baruipur, Kolkata 322456 India
Contact person: Protosh Roy Chaudhary
Type of firm: Established in:
Main product mix: 5
Annual turnover: 100,00,000 (1 crore)

PROCUREMENT
Steel consumed:
Grades of stainless steel used: 410 / 420
Raw material purchased from:

PRODUCTION
Annual production: 120,000
Types manufactured: 10 types
Speciality areas: Ophthalmic Scissors & forceps
Number of employees: 5
Average wages paid: INR 8000-10,000

DESIGN
In house design capabilities: No
Database of designs: No
Access to user information and feedback: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: Exports
Branding & promotion: Minimal
Packaging: Export quality packing
Web presence: Yes

STRENGTHS
Quality conscious to a very high extent
Invested in punching die, controls production through vendors
Very conscious of design and new product development

WEAKNESSES
More HR needed, buys blank, gets punched, some treatment, time consuming for treatment, uses skilled labour for unskilled jobs

THREATS
Change in foreign exchange rates affects margins

OPPORTUNITIES
New product development with medical plastics
Huge demand for existing products
Lack of ergonomic workstations
Unorganised workplaces
EYE GLANCE ASSOCIATES

22555, Baruipur, Kolkata 322456 India
Contact person: Chandan Sardar
Type of firm: Established in:
Main product mix: Ophthalmic Instruments
Number of employees: 4
Annual turnover: INR 400,000 (4 lacs)

PROCUREMENT
Steel consumed:
Grades of stainless steel used: 420
Raw material purchased from: Classic Metals / Hyderabad & Mumbai

PRODUCTION
Annual production: 25000
Types manufactured: Ophthalmic instruments
Speciality areas: Ophthalmic disposables
Number of employees:
Average wages paid:

DESIGN
In house design capabilities: Yes
Database of designs: As per standard designs of imported instruments
Access to user information and feedback: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealer, Self Marketing
Branding & promotion: Own brand
Packaging: Has developed customised packaging
Web presence: None

STRENGTHS
Progressive design approach
Aggressive towards opportunities
Invests in moulds and dies, get production done through local vendor

WEAKNESSES
Financing for expansion
No forging facility
Outsources heat treatment of tips
Outsources powerpress jobs

THREATS
Narrow product mix makes Eye Glass vulnerable to economic changes.
Low value products also mean tighter margins which get affected if there is an economic downturn.
Low value Chinese imports could be a cause of concern in the near future.

OPPORTUNITIES
Product diversification into other disposables is a huge potential area.
Ergonomic design of new ophthalmic knives is a strong possibility.
Web design, branding and catalogue design to improve brand visibility is a possibility.
Lack of ergonomic workstations
Unorganised workplaces
**KANJI SURGICALS**

22555, Baruipur, Kolkata 322456 India  
Contact person: Supren Kanji  
Type of firm: Unregistered: 1980-00, registered in 2000  
Established in: 1980  
Main product mix: Theatre instruments  
Number of employees:  
Annual turnover:  

**PROCUREMENT**  
Steel consumed:  
Grades of stainless steel used: 410 / 420 / 304  
Raw material purchased from:  

**PRODUCTION**  
Annual production:  
Types manufactured: 500 types of instruments  
Speciality areas: General, Ophthalmic, Dental, Gynaecology  
Number of employees:  
Average wages paid:  

**DESIGN**  
In house design capabilities: Yes  
Database of designs: Yes  
Access to user information and feedback: Yes  

**SALES, MARKETING & PROMOTIONS**  
Main selling routes: Only governmental institutions  
Branding & promotion: Yes  
Packaging: Custom designed  
Web presence: Yes  
Exports: Just commenced  

**STRENGTHS**  
In business for 30 years, has a very strong presence in the institutional and government sectors. Kanji Surgicals has ISO 9001 certification, which gives them a strong standing as quality conscious players in the segment. Kanji surgicals gets the finished products tested at metal testing labs in Kolkata, as a part of the quality control processes.  

**WEAKNESSES**  
Not Known as visit to works was not allowed  
Catering to only the governmental sector limits expansion prospects.  

**THREATS**  
Instruments from Sialkot, Pakistan  

**OPPORTUNITIES**  
New product development for export markets. Given Kanji’s quality certifications and production capabilities, a conscious strategy of new product development with advanced materials and finishes could be initiated. New and emerging areas such as titanium carbide tools, medical plastics, noninvasive surgical tools and laser surgical equipment could be possibilities. A better web design is recommended to add strength to Kanji Surgicals, as current website does not reflect their standing in the markets.
MIHIR NASKAR
22555, Baruipur, Kolkata 322456 India
Contact person: Mihir Laskar
Type of firm:
Established in:
Main product mix:
Number of employees:
Annual turnover:

PROCUREMENT
Steel consumed variable, as per orders
Grades of stainless steel used: 410, 420
Raw material purchased from: Supplied by dealers

PRODUCTION
Annual production: 8,000
Types manufactured: General instruments
Speciality areas: None
Number of employees: 6
Average wages paid: INR 100 per day

DESIGN
In house design capabilities: None
Database of designs: None
Access to user information and feedback: None

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers who outsource jobs
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
None

WEAKNESSES
Mihir is completely dependent on dealers such as Chatterjee surgicals for everything. He equates the situation to the ancient zamindari system, wherein the vendor is completely subjugated in all aspects of the trade. He receives his orders from Chatterjee surgicals who also supplies the raw materials, arranges financing, and other necessities.

THREATS
Dependency on dealer leads to subjugation at all levels. Caught in a vicious cycle of lack of finance and not being able to market the products, Mihir is subject to unpredictability of trade.

OPPORTUNITIES
Improve quality control procedures such that the output can be recognized in the dealer circles. Access to catalogues and designs, standards and other information about advances in the field would only enable Mihir to develop newer products which could bring in revenue.
Lack of ergonomic workstations
Unorganised workplaces

DESIGN OPPORTUNITIES MATRIX
N SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Hamid Mohalla
Type of firm: Proprietorship
Established in: 1990
Main product mix: Theatre instruments
Number of employees: 14
Annual turnover: INR 45,00,000 (45 lacs)

PROCUREMENT
Steel consumed:
Grades of stainless steel used: 410, 420
Raw material purchased from:

PRODUCTION
Annual production: 36,000
Types manufactured: 100 types
Speciality areas: Orthopaedic / Ophthalmic / Neurosurgical
Number of employees: 14
Average wages paid: INR 200 per day

DESIGN
In house design capabilities: Partial
Database of designs: Yes, Optech & Martin Med catalogues
Access to user information and feedback: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealer - Modern Surgicals, Kolkata
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
N Surgical is a well established firm that is quite known in the dealer network. Hamid is a vocal, aggressive proponent of positive change in the association and cluster of large Hamid understands quality, market dynamics and the need to create a product differentiation through aesthetic treatment of instruments. He recommends titanium coating, which though expensive, puts him in a higher league as compared to other units.

WEAKNESSES
Quality of steel is a suspect. Rust is seen in the instruments which has a negative repercussion from the markets.

THREATS
IndoGerman, Chennai; Sialkot, German & Punjab clusters.

OPPORTUNITIES
Given the financial stability, Hamid Mohalla could explore new product development focusing on niche specialty-high value surgical instruments. This would create a brand value. Also, a strong web presence is required to attract export business.

N SURGICALS

22555, Baruipur, Kolkata 322456 India
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Packaging: None
Web presence: None

STRENGTHS
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OPPORTUNITIES
Given the financial stability, Hamid Mohalla could explore new product development focusing on niche specialty-high value surgical instruments. This would create a brand value. Also, a strong web presence is required to attract export business.
Lack of ergonomic workstations
Rusting, a huge health issue in surgery
SARKAR

Baruipur, Kolkata 322456 India
Contact person: Netai Sarkar
Type of firm: Established in:
Main product mix: Number of employees: 4
Annual turnover: INR 200,000

PRODUCTION
Annual production:
Types manufactured:
Speciality areas: Brain Surgery
Number of employees: 3
Average wages paid: INR 180 per day

DESIGN
In house design capabilities: None
Database of designs: Catalogues of international companies
Access to user information and feedback: None

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
Able to replicate complicated brain surgery instruments just with the help of an image.

WEAKNESSES
Is financially insecure, unable to market oneself, completely subjugated by prominent dealers in the cluster / Kolkata.

THREATS
Has no identity or brand. He is susceptible to market fluctuations. Even with the capability of making complicated instruments, he has no information as to what the final selling price or where it sells. Each unit is sold by Netai Sarkar for INR 25,000, whereas the final selling price in the market is 4 times more. Due to close price, he is extremely vulnerable to labour issues, since he is not able to pay higher wages.

OPPORTUNITIES
To work with the dealers to develop speciality instruments, which has higher value.
Rusting of instruments is extremely common, a huge health issue
Lack of ergonomic workstations
Copying from catalogues / drawings, no design initiatives
NIVIA SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Nivia Mondal
Type of firm: Unregistered
Established in:
Main product mix: All theatre instruments
Number of employees: 
Annual turnover:

PROCUREMENT
Steel consumed:
Grades of stainless steel used: 410 / 420
Raw material purchased from: Mukund Steels, Baruipur

PRODUCTION
Annual production:
Types manufactured:
Speciality areas:
Number of employees:
Average wages paid:

DESIGN
In house design capabilities: Yes
Database of designs:
Access to user information and feedback:

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers in Bhopal, Jaipur, Ranchi and Uttar Pradesh
Branding & promotion: Self marketing / door to door sales
Packaging: Yes
Web presence: None

STRENGTHS
Nivia Mondal is quite confident about the quality of his instruments. Nivia Surgical has a marketing network which makes it independent of dealers in Baruipur. This gives greater access to Nivia surgicals. Nivia surgicals also specialises in one-off development in very low volumes of specialised instruments in gynaecology. This open up possibilities for further specialisation and expansion.

WEAKNESSES
Lack of availability of good quality stainless steel is a big deterrent. Lack of knowledge about the technicalities of the instruments is a big factor. Lack of good electropolishing capabilities is an issue.

THREATS
Instruments from Sialkot pose a serious threat. Instruments from Sialkot look better and last longer without rusting, which points towards very high level of electropolishing knowledge. Lack of manpower is another big factor. The industry as a whole is facing the issue but Nivia Mondal contends that the Common Facility Centre (CFC) has been a contributor to the manpower issue. Workers often migrate to other professions as they are convinced that the CFC would replace them eventually with machines.

OPPORTUNITIES
Improving finishes and textures of existing instruments. New product development for other areas which are low volume - high value.

NIVIA SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Nivia Mondal
Type of firm: Unregistered
Established in:
Main product mix: All theatre instruments
Number of employees:
Annual turnover:
Lack of ergonomic workstations
Low lighting and cramped work stations
PLUS SURGICAL

22555, Baruipur, Kolkata 322456 India
Contact person: Sanjib Chakraborthy
Type of firm:
Established in:
Main product mix:
Number of employees:
Annual turnover:

PROCUREMENT
Steel consumed
Grades of stainless steel used: 304, 420
Raw material purchased from: Classic metals, Mumbai

PRODUCTION
Annual production: 700,000
Types manufactured: Ophthalmic disposables
Speciality areas: Ophthalmic surgery
Number of employees:
Average wages paid:

DESIGN
In house design capabilities:
Database of designs:
Access to user information and feedback:

SALES, MARKETING & PROMOTIONS
Main selling routes: Arabian countries, conferences, direct sales
Branding & promotion: Yes
Packaging: Yes
Web presence: Yes

STRENGTHS
One of the very established and professional firms in the cluster. Supplies ophthal- matic disposables to Europe, Arab nations, Bangladesh and to dealers all over India. Has a 4 member marketing team which tours India, attends all medi- cal conferences and promotes the product. Has invested in moulds for plastic moulding for use and throw knives.

WEAKNESSES
Low availability of trained manpower forces Plus Surgical to limit their capac- ity to supply. This in turn chases clients away. Plus is asked to supply 100,000 pieces per month but their capacity is 60,000.

THREATS
Rapid advances in medical technology might render the existing designs ob- solete. In disposables, China is a looming threat with their capacity at massive volumes and plastic working capabilities. Mumbai cluster produces instruments with better raw material that does not rust with time. The design of the current ophthalmic disposable knives are easily copied.

OPPORTUNITIES
New product development focusing on medical grade polymers, with insert- able cutting tips.
DESIGN OPPORTUNITIES MATRIX
SUPER SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Giasuddin Mistry
Type of firm: Established in:
Main product mix:
Number of employees:
Annual turnover:

PROCUREMENT
Steel consumed
Grades of stainless steel used: 410 / 420
Raw material purchased from: Mukund Steel Baruipur

PRODUCTION
Annual production: 12000
Types manufactured: General Surgery theatre instruments
Speciality areas: Ear, Nose, Throat (ENT) & Ophthalmology
Number of employees: 6
Average wages paid:

DESIGN
In house design capabilities: Minimal, modifications only
Database of designs: None
Access to user information and feedback: None

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers such as Appaswamy & Indo-Webel
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
Quality and finish of instruments from super surgicals is good.

WEAKNESSES
Lack of exposure to clients, hospitals and other routes of marketing
Unit partially dependent on the dealer network, that exploits them
Unavailability of micro finance prevents them from marketing
Deterioration of quality in hand forged blanks
Steel of inferior quality – corrosion faced in instruments

THREATS
From Sialkot made instruments
Lack of information about new developments in surgery
Over dependence on dealer network

OPPORTUNITIES
Product diversification into other instruments
Development of new & advanced tools for exports
Development of brand through strategic inputs
Web / online presence
SURIAD INDUSTRIES

22555, Baruipur, Kolkata 322456 India
Contact person: Nikhil Chakraborty
Type of firm: Registered
Established in: 
Main product mix: Infra Red lamps, OT lamps,
Number of employees: 150
Annual turnover: INR 60,00,000

PROCUREMENT
Steel consumed
Grades of stainless steel used: 410, 430
Raw material purchased from: Mukund Steel Baruipur

PRODUCTION
Annual production: 36000
Types manufactured: General Instruments
Speciality areas:
Number of employees: 10 for surgical, 150 total
Average wages paid: Per piece basis

DESIGN
In house design capabilities: Yes
Database of designs: Yes
Access to user information and feedback: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: 4 salesman, all India marketing
Branding & promotion: Branded, ASI surgical Industries
Packaging: Yes
Web presence: None

STRENGTHS
One of the very established and professional firms in the cluster. Supplies general surgical instruments and lamps to dealers all over India. Has a 4 member marketing team which tours India to promote the product.

WEAKNESSES
Unavailability of good raw materials and forging facility deters them from aggressively marketing product. Raw material is inferior and rust is seen.

THREATS
Rapid advances in medical technology might render the existing designs obsolete. In disposables, China is a looming threat with their capacity at massive volumes and plastic working capabilities. Mumbai cluster produces instruments with better raw material that does not rust with time.

OPPORTUNITIES
New product development focussing on medical grade polymers, with insertable cutting tips. An e-portal offering various types of instruments can be initiated which would increase visibility. New product development (NPD) with advanced surgical capabilities can be initiated for exports.
Lack of ergonomic workstations
Low lighting and cramped work stations
TA SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Tajuddin Ahmed
Type of firm: Established in:
Main product mix: Ophthalmic instruments
Number of employees:
Annual turnover:

PROCUREMENT
Steel consumed:
Grades of stainless steel used: 420
Raw material purchased from:

PRODUCTION
Annual production: 24000 pa
Types manufactured: 15 types
Speciality areas: Ophthalmic Instruments
Number of employees:
Average wages paid: INR 150 per day

DESIGN
In house design capabilities: None
Database of designs: None
Access to user information and feedback: None

SALES, MARKETING & PROMOTIONS
Main selling routes: Local dealers
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
Products are of reasonable quality.

WEAKNESSES
Lack of exposure to clients hospitals and other routes of marketing
Unit partially dependent on the dealer network that exploits them
Unavailability of micro finance prevents them from marketing
Deterioration of quality in hand forged blanks
Steel of inferior quality - corrosion faced in instruments

THREATS
From Sialkot made instruments
Lack of information about new developments in surgery
Over dependence on dealer network

OPPORTUNITIES
Product diversification into other instruments
Development of new & advanced tools for exports
Development of brand through strategic inputs
Web / online presence
Lack of ergonomic workstations
Low lighting and cramped work stations
UK SURGICALS

22555, Baruipur, Kolkata 322456 India
Contact person: Mihir Laskar
Type of firm:
Established in:
Main product mix:
Number of employees:
Annual turnover:

PROCURMENT
Steel consumed:
Grades of stainless steel used: 410, 420 SS
Raw material purchased from: Mukund Steels, Baruipur

PRODUCTION
Annual production:
Types manufactured: General surgery instruments
Speciality areas: Tungten Carbide tools
Number of employees:
Average wages paid:

DESIGN
In house design capabilities: None
Database of designs: None
Access to user information and feedback: Yes

SALES, MARKETING & PROMOTIONS
Main selling routes: Dealers
Branding & promotion: None
Packaging: None
Web presence: None

STRENGTHS
Quality and finish of instruments from UK surgicals is good.

WEAKNESSES
Lack of exposure to clients, hospitals and other routes of marketing
Unit partially dependent on the dealer network, that exploits them
Unavailability of micro finance prevents them from marketing
Deterioration of quality in hand forged blanks
Steel of inferior quality – corrosion faced in instruments

THREATS
From Sialkot made instruments
Lack of information about new developments in surgery
Over dependence on dealer network

OPPORTUNITIES
Product diversification into other instruments
Development of new & advanced tools for exports
Development of brand through strategic inputs
Web / online presence
DESIGN OPPORTUNITIES MATRIX

- Disorganised workplace
- Low lighting
- Lack of ergonomic workplaces
COMMON ISSUES

QUALITY RAW MATERIAL PROCUREMENT
The entire cluster is unanimous in the opinion that the stainless steel that is currently available in Baruipur through dealers such as Mukund Steels, is substandard and of inferior quality. The MSME units also believe that fake, local steel is often passed off as original make Mukund Steel, which causes rust and corrosion within months. This seriously jeopardizes the brand of Baruipur make instruments, with big clients preferring to purchase from Sialkot, Pakistan.

The current buying capacity of each unit is very small given the fact that most purchase steel on a month to month basis. Without buying capacities, they are unable to individually ensure that good, certified raw material reaches their doorsteps.

Whilst certain large units conduct testing and certification through laboratories in Kolkata, most units are unable to do so due to cost and financial reasons.

LACK OF FORGING FACILITIES
The entire cluster suffers from the lack of forging facilities, which prevents them from catering to large export facilities. Currently the maximum output comes from small, unorganized manual forges run by local blacksmiths, which is inadequate, unscientific and crude.

The Common Facility Centre (CFC) was touted to be an answer to the problem, but the procurement of the wrong forging machine, understaffing and lack of cohesive vision on the part of the government has resulted in a complete failure of the money spent on the CFC.

CORROSION IN INSTRUMENTS
The entire cluster experience rapid corrosion problems in the instruments manufactured. This is catastrophic, as exposure to corrosion can cause gangrene and death in patients. Whilst the corrosion is originally blamed on the sub-standard raw material, the units are also to blame. Lack of scientific tempering and annealing in the forged pieces causes the instruments to be brittle and rust prone. Added to this, electroplating, which is a mandatory procedure to prevent rust, is often performed by dipping the instruments in a cocktail of acids, with absolutely no scientific understanding. The acid mixture is often crudely prepared, which causes the quality to completely fail within months of use.
SURFACE FINISHING OF INSTRUMENTS

The instruments from Baruipur cluster exhibit a very low technical capability of surface finishes and textures. Compared to German and Pakistani instruments, the quality of surfaces leaves a lot to be desired.

There is a lack of technical knowledge or research regarding the finishes. Coatings that are available to prevent rust and improve finishes are not known to the majority of the units.

Furthermore, there is no control on the production process, which further compounds the problem.

ELECTROPLATING

Electroplating, which is a mandatory procedure to prevent rust, is often performed by dipping the instruments in a cocktail of acids, with absolutely no scientific understanding. Whereas electroplating requires precise equipment, none of the MSME units audited had formal understanding or access to electroplating.

The acid mixture is often crudely prepared, which causes the quality to completely fail within months of use.

ERGONOMICS OF SURGICAL INSTRUMENTS

Understanding the ergonomics of surgical instruments is completely absent as most instruments are copies of foreign make instruments, copied from catalogues or drawings or visually reproduced.

NEW PRODUCT DEVELOPMENT OF HIGH TECHNOLOGY TOOLS

There is very little effort towards new product development of high technology or specialty surgery equipment, which could be an answer to the growing competition. All units manufacture simple, commonplace disposable, which is a high volume - low price segment, which brings it into direct competition with Sialkot.

If the units were to produce specialty equipment as a part of their overall product mix, it would help in carving a unique niche for themselves.
PACKAGING

Most units have no designed packaging for the proper despatch of manufactured goods. They are mostly in the ‘white label’ business wherein the buyer relabels the product with own name and logo. This has caused a complete loss of identity over the past 50 years.

HUMAN RESOURCES

All units suffer from lack of skilled manpower which is a direct result of low wages and growth opportunities for the workers. Lack of training, segmentation and wage levels plus opportunities in other sectors for low skilled work has contributed in glut of workers.

WEBSITE & ELECTRONIC IDENTITY

Only two of all the units audited had websites. With the complete absence of any sort of identity, location in the deep interiors and no efforts of self promotion has resulted in the entire cluster being completely unknown. Whilst the units believe that they are well known, it is only partially in pockets. There is no global recognition or acknowledgement of existence. This has lead all units to be completely subservient to dealers in metros, who exploit the units and claim the margins of profitability.
CLUSTER LEVEL INTERVENTIONS

DESIGN OF BARUIPUR QUALITY SYMBOL

The cluster units in Baruipur need to develop a "quality mark" which would be carried on all produced items of quality from the zone of Baruipur. The mark would be awarded as a symbol of trust to those companies which have followed the laid down norms of quality from raw materials, production and process perspectives. This would ensure, in the long run, to differentiate between low cost low quality products and high quality products. This differentiation is critical to the survival of the industries in Baruipur, opening up opportunities for growth in both domestic and international markets.

DESIGN OF E-PORTAL

At most, there is a very scattered presence of the Baruipur cluster companies on the internet. In today's times of great web awareness, this comes as a surprise, and the virtual presence of these companies is compromised with. Clusters in Pakistan and Germany, have a strong promotional internet presence, which clearly allows buying houses or importers to contact them. Baruipur companies would benefit from a unified presence on the web, which allows customers to be directed into the site. Sites like www.jimtrade.com, www.alibaba.com, are good benchmark. Using free platforms such as blogs (www.wordpress.com), mini social networking sites (www.ning.com) or free platforms with commercial templates (www.wordpress.org) could be a small start to the process. Each company could be given a single page with a pre-existing template to display their products and contact information.

DESIGN OF MUSEUM

The BASIMAA body should take the initiative to promote good design that would become showcase reference for other companies to benchmark against. The establishment of a museum or display of good design has several benefits. The museum would contain sourced pieces from Germany, British, American and other sources. This would enable comparison of quality and finishes, as a constant reference. There would be a section dedicated to new and innovative tools that are being developed and manufactured by other clusters. This could spur knowledge growth and new product development in the cluster. Library of design data & Library of catalogues could be maintained in the centre.

MATERIAL BANK

The BASIMAA body should take the initiative to commence a material bank which leverages the cumulative buying power of all units together. Rather than individual buying, if all units develop a joint material procurement plan, the power to negotiate the rates, quality and supply items is higher. This would be a fruitful solution to develop other vendors, other than Mukund Steel at Baruipur.

EMPLOYEE TRAINING & CERTIFICATION PROGRAM

BASIMAA could initiate a worker training program in collaboration with Jadavpur University, ITI centres or Indo German Tool Room. This would infuse confidence into the worker community about future employment prospects and provide the units with a steady supply of manpower. Fixing of wage levels could also aid in the certification which could give growth prospects to the workers.

EROGONOMICS & DESIGN RESEARCH

A joint effort by BASIMAA with units should focus on a surgical ergonomics and New Product Development program with help of institutions such as NID, IITs etc, which could give the opportunity of shifting from low value mass produced disposables to low volume - high value goods, which would increase branding, global recognition and reach of exports.

DESIGN OF PACKAGING, SURGICAL ALLIANCE NORMS

A joint effort by BASIMAA with units should focus on design and development of generic packaging, which could be purchased by all units. This common branding and good quality packaging would help in promotion and branding. A surgical alliance should be commenced in league with institutions of high research and learning whose affiliation would increase the identity and presence of the individual units.