

Human Resource and Skill Requirements in the
Gems and Jewellery
Sector
(2013–17, 2017–22)



N · S · D · C
National
Skill Development
Corporation

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Abbreviations

BIS	Bureau of Indian Standards
CAD	Current Account Deficit
CAGR	Compound Annual Growth Rate
CPD	Cut and Polished Diamonds
CSO	Central Statistical Organization
FDI	Foreign Direct Investment
FEE	Foreign Exchange Earnings
F&P	Faceting & Polishing
G & J	Gems & Jewellery
GDP	Gross Domestic Product
GIA	Gemological Institute of America
GJF	Gems and jewellery Trade Federation
GJSCI	Gem and Jewellery Skill Council of India
GTL	Gem Testing Laboratory
IDI	Indian Diamond Institute
IIGJ	Indian Institute of Gems and Jewellery
IT-BPO	Information Technology – Business Process Outsourcing
ITI	Industrial Training Institute
KPCS	Kimberley Process Certification Scheme
KYC	Know Your Customer
MOSPI	Ministry of Statistics and Programme Implementation
NBFC	Non-Banking Financial Company
NCAER	National Council of Applied Economic Research
NIC	National Informatics Center
NSCMRS	National Skill Certification and Monetary Reward Scheme
PML	Prevention of Money Laundering
PPC	Production planning and control
PPE	Personal protection equipment
QC	Quality Check
RA	Rough Assorting
RBI	Reserve Bank of India
RC	Rough Cutting
SAARC	South Asian Association for Regional Cooperation
SEZ	Special Economic Zone
SOJM	School of Jewellery Management
STAR	Standard Training Assessment and Reward
USP	Unique Selling Proposition

Context and Approach

Brief Background

NSDC had conducted sector wise skill gap studies for 19 high priority sectors in 2008-09

- For the Gems & Jewellery sector, the employee strength being 3.3 million in 2008 . The same study projected incremental requirement estimated at ~ 4.6 million by 2022

The mandate for the current study includes

- Industry analysis to identify and define sector characteristics
- Develop Sectoral Skill demand map and Skill Demand projection for the sector during 2013-22
- Job role and employer identification and study of the support infrastructure
- Detailed assessment and diligence to prioritize opportunities so as to define and map the job roles across the sector and detailed assessment of skill infrastructure to present critical gaps across sectors on critical components of skill building
- Develop actionable recommendations for stakeholders

KPMG has been engaged as a consultant to help evaluate the skill gap in the sector and develop actionable recommendations for stakeholders

Inclusions over the previous study

We are looking at a more detailed and quantitative analysis which can be on the base already available. Finally recommendations for four key stakeholders - Industry, NSDC, Training partners and Government

- Synchronization of the sector wise demand, from the district wise skill gap studies for all states with the 25 sector wise skill gap studies.
- Study led by industry – chairperson with expert panel
- Deep industry involvement in developing the insights, validating the quantitative results
- Recommendations for four key stakeholders - Industry, NSDC, Training partners and Government

Industry Classification

Industry Classification

NIC for gems and jewellery sector

The National Industrial Classification (NIC), brought out by The Central Statistical Organisation (CSO) in the Ministry of Statistics and Programme Implementation (MOSPI), provides a uniform framework for classifying data according to the kind of economic activities. This classification is used in all types of census and sample surveys conducted in India.

Gems and jewellery: NIC classification

Section	Subclass	Description
C (Manufacturing)	23107	Manufacturing of glass decoration pieces and glassware used in imitation jewellery
	32111	Manufacturing of jewellery of gold, silver and other precious or base metal clad with precious metals or precious or semi-precious stones, or of combinations of precious metal and precious or semi-precious stones or of other materials
	32112	Working of diamonds and other precious and semi-precious stones including the working of industrial quality stones and synthetic or reconstructed precious or semi-precious stones
	32113	Production of worked pearls
	32114	Manufacturing of coins, including coins to be used as legal tender, whether or not of precious metal
	32119	Manufacturing of other articles of gold, silver and other precious and semi precious metal and stone
	32120	Manufacturing of imitation jewellery and related articles
G (Wholesale and Retail Trade)	47733	Retail sale of jewellery and imitation jewellery

Gems and jewellery: industry classification

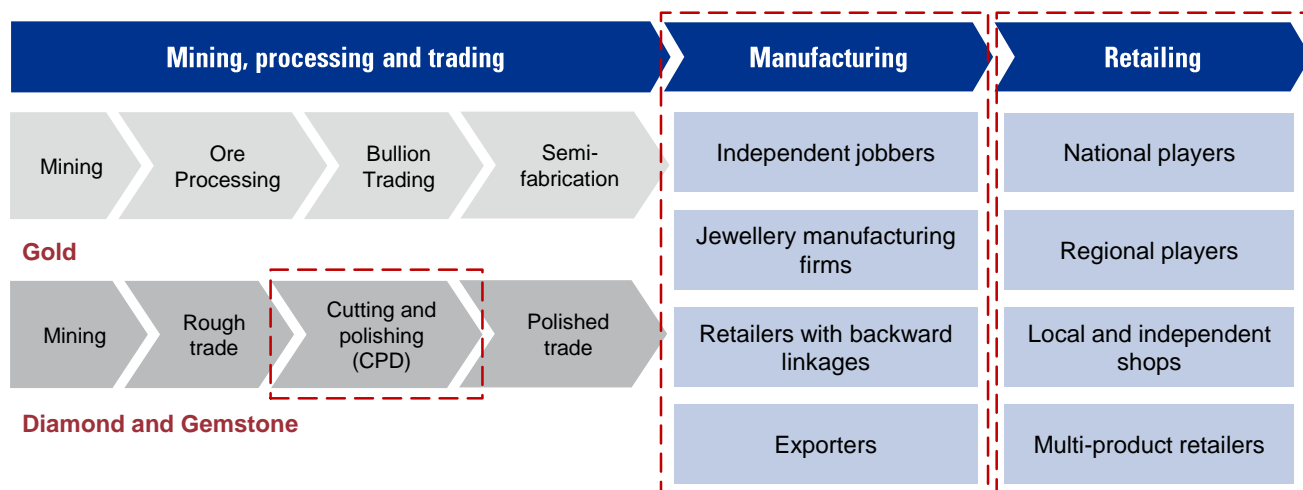


Based on the economic activities from NIC-2008, major sub-sectors of the sector are: processing (diamond, and gemstone), manufacturing (cast and diamond set, and handmade and gem set) and retailing.

Industry Classification

Value chain of the sector

Gems and jewellery value chain



Mining, processing and trading:

Gold: Expert estimates put India's gold mining history to be as old as 6,000–8,000 years. However, recent times have seen minimal gold mining in the country due to a multitude of factors. The environmental impact of open mining, dwindling known reserves, inadequate exploration expenditure, and inadequate use of the world's latest exploration and mining techniques, being some of these constraints that have fostered an unfavourable environment for investment.

Therefore, the sector is dependent on imports of gold in unwrought or semi-manufactured form. Although, recent years have also seen an upsurge in import of gold in the finished form as jewellery. Gold is imported by nominated banks, agencies and bullion banks, and select trading houses (star and premium). These importing agencies sell-on gold to dealers, jewellery manufacturers and retailers. Such sales are not open to retail consumers and are restricted to B2B transactions.

Diamond: The world currently mines 150 million carats worth of diamonds on an annual basis. The three biggest diamond centres in the world are Belgium (Antwerp — handling and CPD), India (Surat, Mumbai – CPD), and the US (New York, sales). Currently, diamonds processed in India account for 85 percent in volume, 92 percent in pieces and 60 percent in value of the total world diamond market.

Manufacturing:

The jewellery manufacturing space in India is highly fragmented and characterised by small unorganised players who still account for the lion's share of the market. However, the last few years have seen large organised players emerging, with a greater focus on quality and design. They have brought on to the scene, modern and well organised units. The larger manufacturing units predominantly cater to the organised share of the retail market. Along these lines, retailers have also started backward integration across the value chain to garner higher margins by a greater share in the value addition process.

Retailing:

Given the role of jewellery, as both a consumption and investment medium, and the population numbers in rural areas, local and independent stores account for almost four-fifths of the total retail outlets in India. There exist national and regional players who are trying to expand their footprint in the country through multiple avenues, such as associating with local jewellers and multi-product retailer points of sales.

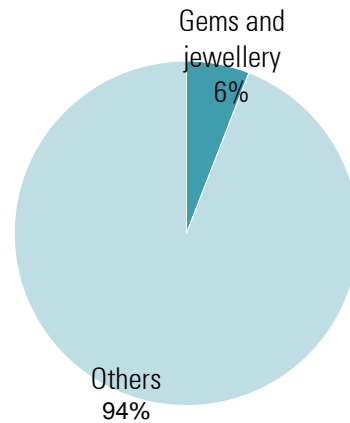
Industry Overview

Gold has always been regarded as precious as well as important by citizens of this country, be it in the form of bars, coins or jewellery. It is used as a medium of saving, gifting, form of transfer of wealth, as well as a highly liquid financial instrument. Initially, India was a large producer of gold; its reserves have been depleted by its ever increasing demand and now remains negligible. In recent years, India has accounted for almost one-fourth of the annual global demand for gold and is one of the world's largest importers of gold. Further, raw materials, such as silver, platinum, gemstones and diamonds, among others are also imported from different parts of the world.

Share of the gems and jewellery sector in India's GDP (2012–13)

With a market size of almost INR 4,54100 crore, the sector has a sizeable share of the GDP at ~5.9 percent, apart from large-scale employment generation and foreign exchange earnings.

The highly labour-intensive nature of the sector with large number of employees in the unorganised space, has led to job creation, employing more than 0.464 million people in the country in 2013. This is more than the population of Kolkata, the seventh most populous city in India with a population of 4.5 million; this indicates the high employment generation capacity of this sector.



Source: "All That Glitters is Gold" FICCI (November 2013), Census of India 2011, KPMG Analysis

India, like the middle-east and other Asian countries, is one of the leading demand clusters for gold jewellery whereas America and Europe have a high demand for diamond jewellery. With financial inclusion still some years away, the use of gold and jewellery as an investment tool coupled with other pull factors, such as increasing disposable income and rising prominence of contemporary jewellery in the workplace, the demand in the country for gold and jewellery products is not expected to see a drop in the coming years.

India is not just a large consumer of jewellery products but also one of the preferred exporters of fabricated jewellery products. The quality of workmanship, intricacy and variety of designs are some of the push factors that drive India's proposition as a source of high quality products. With the Indian consumer constantly looking out for variety in products, jewellery manufacturers are compelled to continuously bring out new designs. This shows the high level of innovation and flexibility that the workers possess, who are considered one of the most skilled in the world.

Indian clusters for diamond processing — Surat, Ahmedabad; for gemstone processing — Bhavnagar and Jaipur; and for handmade gold jewellery — Kolkata, Thrissur and Coimbatore — are among other areas that are known world over for their products. Every region of the country has a different style of jewellery unique in its proposition. Some examples of these traditional jewellery forms are *Bikaneri*, *Dhokra*, *Minakari* and *Filligree*. Collectively, India is a source of manufacturing all varieties of products; and its presence is critical in the global gems and jewellery sector.

Contribution to India's exports (2012–13)

The sector is a major contributor to Foreign Exchange Earnings (FEE) of the country with approximately INR 210000 crore exports in 2013. USA, Canada and the European Union account for the largest share of exports across categories viz. rough diamonds, cut and polished diamonds, coloured gemstones, gold and silver jewellery.

The share of the sector in India's exports is second only to petroleum (crude and products), which accounts for almost one-fifth of total exports, estimated at more than INR 1800000 crore in 2013.

In the current scenario, approximately 14 of 15 diamonds processed in the world are processed in India. However, by value, they account for only three-fifths. This clearly indicates that while India is important in the value chain by sheer numbers, the quality and value of diamonds processed in the country is at a lower level as compared to the other three major processing centres of Antwerp (Belgium), New York (United States of America), and Ramat Gan (Israel).

Similarly, the handmade segment of the manufacturing sector faces tremendous challenges. With the sector characterised by small unorganised processing and manufacturing units, maintaining and increasing the level of product quality is critical if India seeks to consolidate its value in the global scenario. With lower labour costs in China and South East Asian countries, they have been able to invest towards mechanisation ensuring a higher standard of quality and lower turnaround time. Further, global consumers are not highly demanding in terms of variety of designs, fostering an environment that supports increasing mechanisation.

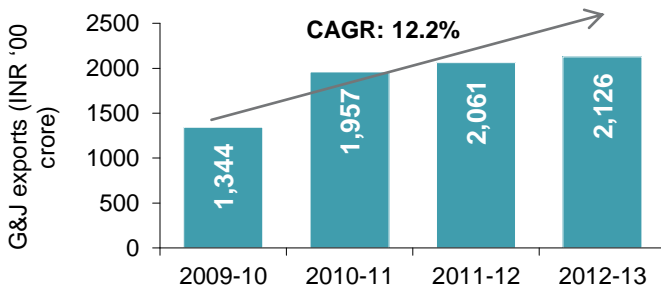
Reduction in gold imports due to impact on India's foreign exchange reserves

With India's status as one of the largest importers of gold in the world (one-fifth), rising gold prices, and increasing demand, the management of demand and supply has important policy implications for fiscal policy and exchange rate management. During 2011–12, high trade deficit caused by high gold imports led to a worsening of India's current account deficit (CAD).

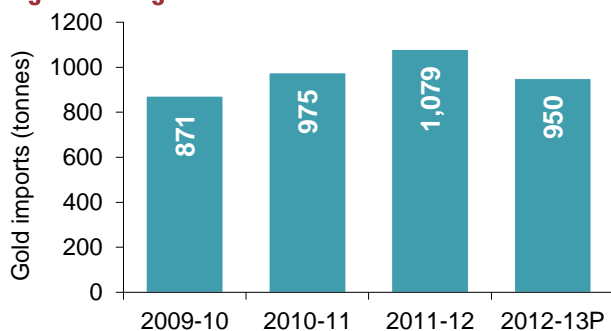
Thus, with the intent to curb gold inflow, the union Government of India increased import duty to 10 percent and placed a minimum export requirement of 20 percent on any gold imports.

Due to the economic impact of the recent global recession, the Indian sector faced a downturn for the first time in more than a century. The larger players in the sector have used this lull period to build capability and capacity. With increasing competition and cost consciousness, Indian players in the processing and manufacturing domains have been adopting machine manufacturing processes to complement the hand made segment to effect a positive upturn in quality and turn around time.

On the retail side, regional players have increased their footprint in a quest for pan-India coverage and simultaneously, focussed on gaining brand prominence in the market. Smaller players are effecting a culture change by increasing professional involvement in their businesses as they look to build a regional presence.



Source: GJEPC Export Statistics, Ministry of Commerce and Industry, KPMG Analysis

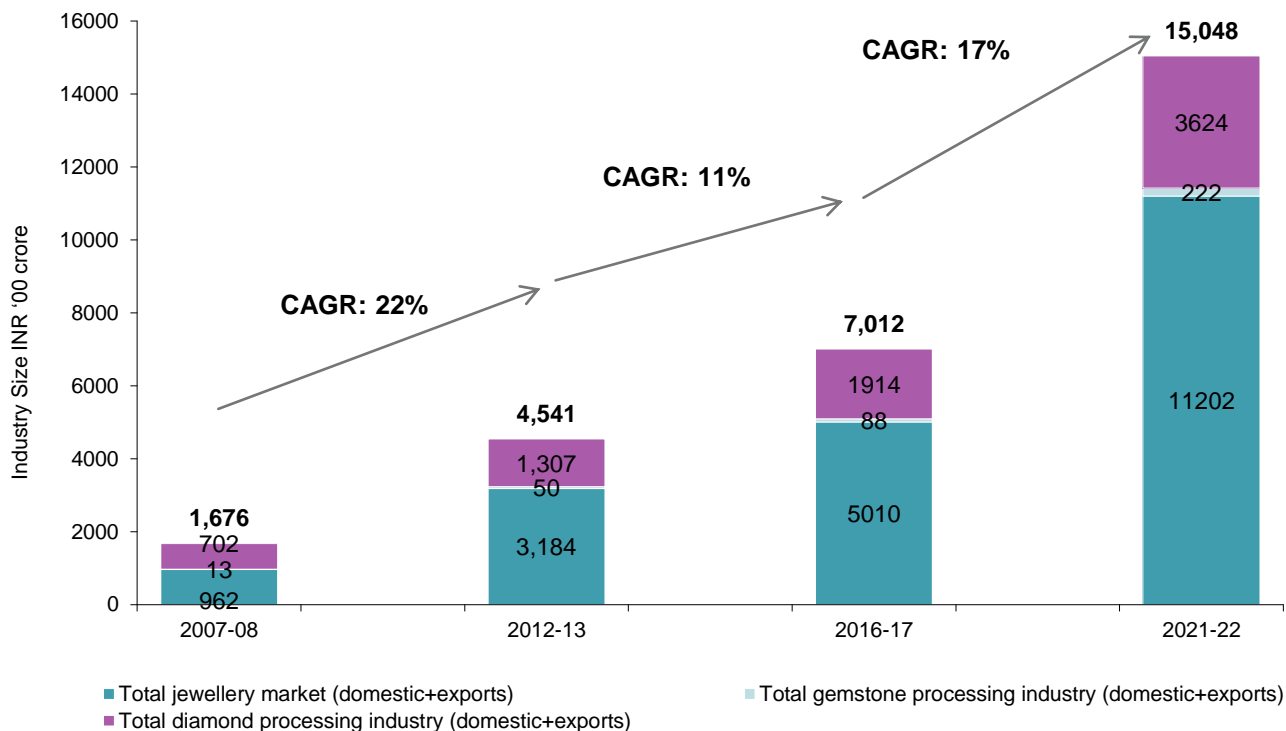


Source: RBI working group to study issues related to gold imports and gold loans by NBFCs, World Gold Council and DGCI&S, KPMG Analysis

Industry Overview

Size and growth of the sector in the coming years

Historic and projected domestic market size (INR '00 crore)



Source: "All That Glitters is Gold" FICCI (November 2013), KPMG Analysis

Indian gems and jewellery sector has grown at a CAGR of 22 percent, albeit at current prices, in the last five year period from FY08 to FY13. This has largely been driven by the gold jewellery segment in terms of share (81 percent of the market in FY13) but on a growth rate basis, diamond jewellery has been the faster growing segment at ~24 percent CAGR vis-a-vis gold jewellery at ~16 percent CAGR, in line with the market trends of increasing consumer preference for diamonds and diamond studded jewellery.

In the coming years (2013–17), the sector is expected to grow at a slower pace due to increased import duty and enforcement of the 80:20 export rule. Further, competition from other Asian countries, such as China and Thailand in jewellery fabrication will add to the stress on growth.

Industry Overview

Growth drivers

Rising income levels

Though India is one of the largest jewellery markets in the world, it is far from being saturated. Currently, India's per capita jewellery consumption is less than a tenth of that of developed countries such as the US, Japan and Italy. With more households having income to spend beyond basic necessities now, cultural inclination towards jewellery suggests that per capita consumption will increase many fold with rising income levels.

The effects of liberalisation in 1991 have been felt in the new millennium. India's economy was growing at a significant pace and personal disposable income doubled between 2001 and 2008. This has led to a sharp increase in the number of middleclass and upper middle class households in India. As per the NCAER survey, around 1.2 million households in India earned over INR10,00,000 per annum in 2005. This segment is expected to grow to over 3 million by 2015. Further, a share of wallet analysis reveals that jewellery accounts for more than a fourth of the discretionary spending by consumers in India.

Changing demographics

India has one of the 'youngest' populations in the world and this segment is driving the consumerism trend in the country. The youth, with greater exposure to global style trends, are likely to have a significant influence on purchase decisions of households, impacting the discretionary spending and share of wallet segments.

India has an estimated 229 million women aged 20–49. The number of women, the key customer category for jewellery, who are employed in professional sectors is rising very fast. Spending power of women who work is observed to be much higher than women who don't. A majority of these are in urban areas, further increasing their propensity to spend given the choices on offer.

Further, the increasing proportion of working women is leading to a higher number of dual-income families that leads to higher disposable income available for households and thus, higher consumption and a better standard of living.

With increasing proportion of families with high income and consequently, higher disposable income, there is an increasing sense of consumerism. The priority is slowly shifting from saving to spending. Share of discretionary spending is increasing and is expected to be 70 percent of total spending by 2025 as per NCAER economic survey. Further, the country is witnessing an increase in number of HNIs and their asset value. This provides further impetus to jewellery retailers to entice this segment's discretionary spending. Growth expected from this segment could also drive value addition in the sector with consumers favouring higher price points. India's per capita spend on gems and jewellery is low but is growing as witnessed by the 10 percent growth rate in the period 2005–12, as per the World Gold Council.

Traditional role of jewellery in weddings

With more than 300 million people in the 25–29 age group in the period 2011–21, 150 million weddings are expected to take place in this period. Given Indian's penchant for jewellery purchase at times of celebration, nearly 35 – 40 percent of the total wedding expense is on jewellery and related purchases. This is expected to fuel demand for jewellery in this period.

Gold as an investment option

Tier-III and IV towns and rural areas have limited options for investments given the low performance of India in financial inclusion. With landlords and money lenders being the primary source of financial credit in such areas, jewellers have emerged as an alternative, providing investment options through gold jewellery.

Industry Overview

Notable trends

Increasing organised share in jewellery retailing

Increasing purchase of jewellery through online stores

Changing occasions of use

'White wave'

Increasing mechanisation in organised manufacturing space

Increasing share of organised jewellery retailing

Given the demand across the country, domestic organised players are increasingly looking at expanding their footprint to garner market share. Simultaneously there is an increasing demand from the consumer side for hallmarking and certification proving quality of the products. These two factors have led to a marriage of convenience between organised players and local independent outlets in the form of franchisee or association relationships.

In the five years from 2008 to 2013, the market share of organised players has increased from 10 to 22 percent, more than doubling in a five year period. This increasing share will require sales associates and merchandisers with a higher capability in core requisite skills for their roles.

Increasing purchase of jewellery through online stores

With increasing internet penetration and acceptance of online transactions by consumers, jewellery sales via online stores are picking up. While this channel is still in the nascent stage and largely restricted to metros and tier-I cities, it is expected to become key in the coming years. Existing large organised players have added this channel to their distribution network where consumers can browse and purchase products online.

With this expected growth, there would be a greater need for staff with IT skills in areas such as platform development, online merchandising, customer service and order fulfilment. Further, the logistics of deliveries would require additional manpower.

Changing occasions of use

Traditionally, jewellery was not a daily-wear item. It was worn on special occasions. However, recent times have seen an increasing propensity to wear jewellery on a daily basis, for example in offices.

This has led to a shift in consumer tastes from heavy and chunky designs to lightweight and contemporary ones. Designers and product development personnel who can identify such shifts and potential new lines will be key assets for players.

White wave

The share of females in the working population has increased in the last few decades. However, wearing yellow gold products is generally avoided as they stand out. Therefore, to accommodate this, products are now being designed using white metals such as rhodium, polished gold and platinum among others. These contemporary products, generally worn in western countries, are in increasing demand in the last few years by professional women.

Increasing mechanisation in organised processing and manufacturing space

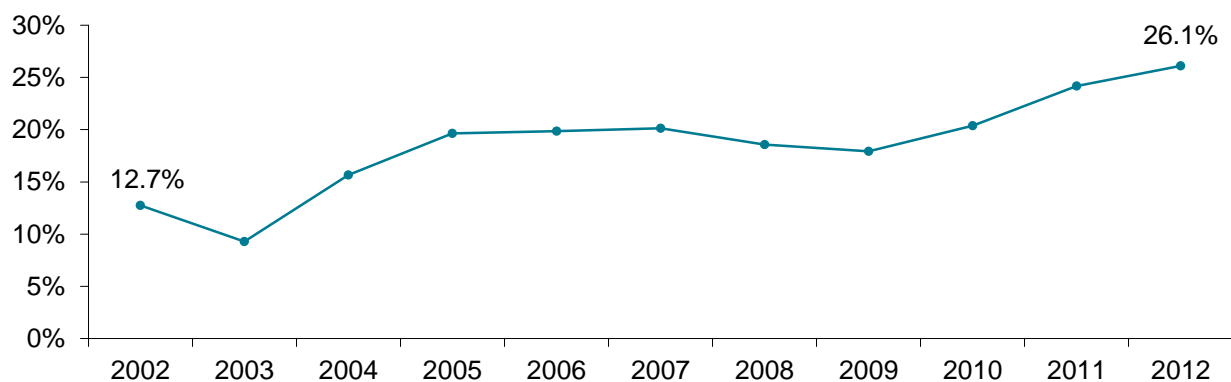
Organised players in the processing and manufacturing space have increasingly adopted newer technologies and machines which have helped them increase efficiencies and improve product quality. This has been prompted by the increasing competition from newer territories such as Thailand and China, in Asia.

Industry Overview

Concerns and challenges (1/2)

Lack of raw materials and high dependence on imports

India's share of annual global demand for gold



Source: RBI Working Group to Study Issues related to Gold Imports and Gold Loans by NBFCs, KPMG Analysis

With production of gold meeting less than 0.5 percent of the total annual demand, India has had to import gold to meet its demand.

Its share of the annual global demand for gold has steadily increased from ~13 percent in 2002 to more than a quarter, ~26 percent, in 2012. Further analysis of the trend through the years indicates that barring a marginal dip in 2008 and 2009, the global recession years, India's share has steadily been increasing.

Gold is the second-largest import item after petroleum crude, and its imports were estimated at INR 345000 crore during 2011–12, an upshot of 49.2 percent over 2010–11. With the increase in the domestic market, a lesser quantum of gold is being exported, impacting the external sector stability. RBI working group to study issues related to gold imports, further estimates that gold imports will account for almost 2 percent of the GDP in the coming years and add to the current account deficit (CAD) adversely. This prompted the Government of India to introduce policies governing import and export of gold in the second half of 2013. The import duty on gold was raised to 10 percent and a minimum export requirement of 20 percent on any imports.

While the intent was to limit the impact on CAD, there were many implications on the gems and jewellery sector. Due to limited supply, domestic sellers of gold are charging a further 10 percent premium for delivery of gold, impacting the cost to the end-consumer. To circumvent this double hike, manufacturers have increasingly been importing gold in the form of finished goods (10 gm chain, solid bangles) from Dubai and Singapore either for direct sale or melting to make customised products. This despite the 15 percent import duty applicable on import of finished gold jewellery as it leads to a lesser final product price hike. With such a large increase in prices passed on to the consumer, volume per transaction has been negatively impacted.

Security concerns during movement of goods

With increasing footprint, especially in tier II and III cities, retailers are increasingly facing security related concerns in part due to increased distances and high value of goods. Also, with increasing focus on B2B sales between manufacturers and retailers, courier safety is a concern during sales' calls when typically carrying sample products.

Highly fragmented and unorganised market does not lend itself to mechanisation

The processing and manufacturing space is characterised by small entrepreneurial ventures. Such setups typically do not have access to advanced manufacturing techniques and the quality of output is also not of the highest order. Further, the processes used in such setups may not be the latest one in the market employed by the larger manufacturing setups based on research and development initiatives.

Transfer of such knowledge is generally limited with great emphasis placed on maintaining sanctity of processes in use at each player's shop floor. This further limits the capability and growth of the entire sector when compared with the global competition from players such as China and Thailand.

China, in its quest for manufacturing supremacy across sectors, has also set up an environment that fosters investment. With their clear focus on machine made goods and growing capability, India will have to step up to meet the competition.

Health and safety concerns in the workplace

The processing and manufacturing sub-sectors are characterised by small scale enterprises employing less than 20 workers. Such setups employ processes that are not at the cutting edge in terms of use of materials and technology. This leads to the use of hazardous chemicals and gases which are toxic and chronic exposure to them can cause lung tissue damage, kidney damage, lung cancer and prostate cancer, among other medical afflictions. Symptoms of such diseases are hard to detect before contracting them.

With little or no stress on health and hygiene factors, the health and safety of workers is at risk. The typical age at which workers exit the sector is between 40–45 years, having worked in the sector for about 20–25 years due to the negative impact on health in this period and a consequent lowering of productivity due to afflictions caused by prolonged exposure to such a harmful working environment.

This has led to a lowering in the attractiveness of the sector as an employer of choice for the younger generations of workforce already employed in the sector. Such a large loss of inherited skills and potential trainers from the current workforce, has long-term implications for the sector and skill level of the workforce in the coming years.

Dying traditional jewellery in India

India has always had a strong link with gems and jewellery. In ancient times, the market was largely dependent on demand from the aristocracy and nobility. Each region of the country, as a result, had a unique form of jewellery, largely derived from the preference of the patrons. For example, the *kundan-jadau* style is largely prevalent in Rajasthan while *filigree* is found in regions of Bengal and northern parts of Orissa.

The *kundan-jadau* style is believed to be introduced by the Mughals but local craftsmen have added several unique styles to it. Many varieties in this style continue to exist today as well, with some adaptations to contemporary preferences. Temple jewellery is another traditional form and has been popular primarily in south India. These are large and chunky jewellery in the shape of idols.

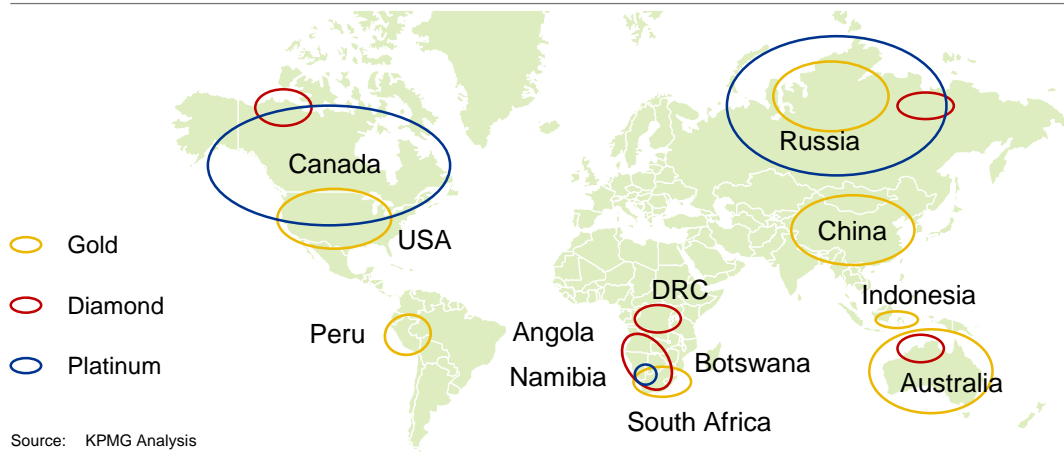
While the market size of traditional jewellery is not large, culturally, traditional jewellery is very important. With reducing inherited skills, the supply of artisans skilled in such forms is dwindling leading to the dying out of these jewellery forms.

Industry Overview

Competitiveness of the sector

The industry operates at a global level and involves high levels of interdependencies among countries at various stages in the value chain. There is no single country that has substantial presence across all stages of the gems and jewellery value chain. The state of the industry is, therefore, impacted by global as well as economic conditions in key markets and sourcing destinations.

Key mining locations



Mining: Mining takes place in every continent (excluding Antarctica, due to a prevention treaty). USA, Canada, Australia, Russia, China and Southern Africa dominate the global mining industry in terms of output and mining and exploration methods and technology. India has negligible known reserves of gold while recent preliminary studies indicate presence of more gold reserves and diamond sources across the country, although any exploration exercises are yet to take place.

Key stone processing locations



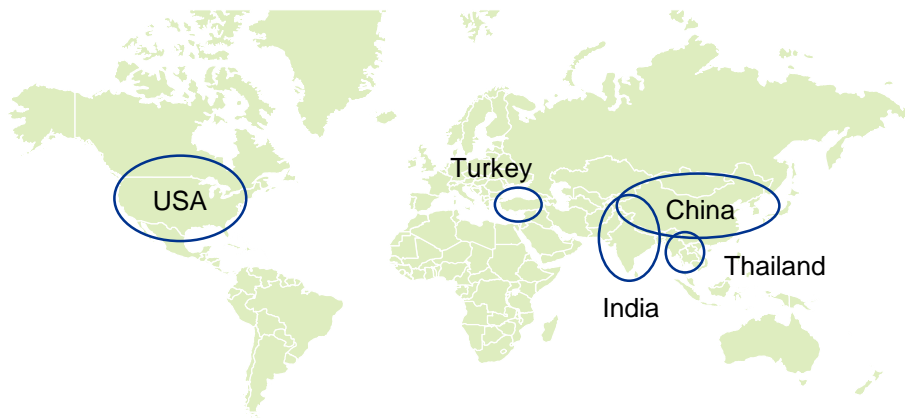
Stone processing: India is one of the largest processors of diamonds and gemstones. It processes more than four fifths of the diamonds by value in the world. India is known for processing of small, low-value diamonds while Belgium and Israel are known for processing large and high-value diamonds.

Thailand is the leader in cutting of coloured gemstones. However, Jaipur in India is the world's largest and most diversified centre for cutting and polishing of coloured gemstones.

Industry Overview

Competitiveness of the sector

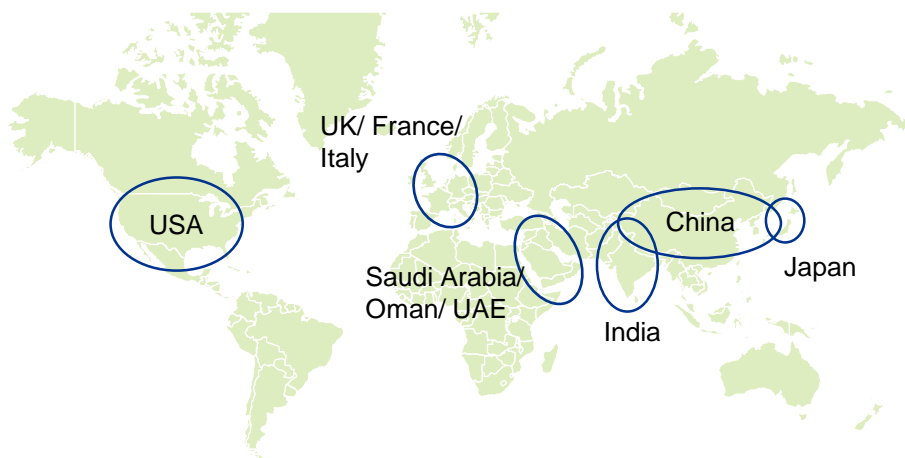
Key jewellery fabrication locations



Source: KPMG Analysis

Fabrication: India is a major centre for jewellery fabrication riding on a number of advantages, such as cheap labour, large domestic demand, and being the largest diamond polishing centre in the world. India is also known for its superior design quality. Turkey is known for high-quality and innovative designs and is also a trading hub for jewellery. China has a large scale manufacturing setup. However, the product restricts imaginative designs. Nevertheless, the investment climate is attracting top global players to setup shops and leverage the cheap labour and manufacturing capabilities of the country. Thailand in the south-east is also credited for its thriving fabrication capacity and capability given the high-quality finished products made in the country.

Key consumption centres



Source: KPMG Analysis

Consumption: USA is the largest consumer of jewellery in the world. However, demand from countries, such as China and India is increasing at a fast-pace and will see them established as major consumption centres in the coming years.

India's prominence in the processing and manufacturing sub-sectors due to cheap labour, superior design quality, highly intricate workmanship among others, coupled with the increasing consumption demand, indicates India will maintain its position in the global gems and jewellery sector.

Industry Overview

Government policies

FDI Policy

The Government of India has allowed 100 percent FDI in the gems and jewellery sector through the automatic route. Further, the same is also allowed for surveying and mining of precious metals other than diamonds and precious stones, metallurgy and processing.

For diamond and gemstone mining and exploration, the government has allowed 74 percent FDI. Further, the government is also looking to float tenders to revive closed gold mines such as Kolar Gold Fields.

Kimberley Process

The Kimberley Process Certification Scheme (KPCS) is a joint governments, industry, and civil society initiative to stem the flow of conflict diamonds viz. rough diamonds used by rebel movements to finance wars against legitimate governments.

India has been part of the KPCS since inception and the GJEPC is the nodal body for KP certification without which no import or export of rough diamonds shall be permitted in the country.

Bureau of Indian Standards Act, 1986, for quality hallmarking

The Bureau of Indian Standards (BIS), the National Standards Body of India, has mandated standards for hallmarking gold jewellery for players in India. Any products made with use of Cadmium cannot be hallmarked. Cadmium, used as a joining agent for gold, gives off fumes that are carcinogenic and could result in cancer. When applying for license, manufacturers have to give an undertaking to the effect that Cadmium will not be used in the entire manufacturing process.

A large number of players, particularly small, unorganised ones, are yet to adopt these standards and workforce employed by these players are largely unaware of these quality standards.

Know Your Customer (KYC) norms

The Government of India has amended the Prevention of Money Laundering (PML) Act to enforce KYC norms for retail purchases of gold and precious stones. Any retail purchases over the amount of INR50,000 will require detailed identity documentation.

The intent is to curb gold demand and restrict conversion of black money into an asset. The industry has seen a drop in sales in the short-term but this step is expected to help clean up the industry and favour the best in the business, driving competitiveness in the sector.

For retailers, considering that such records will have to be maintained for five years, they are likely to see increased administration costs. This would also necessitate increased streamlining of work for efficient operations and training for the workforce

Industry Overview

SWOT analysis

Strengths

The Indian gems and jewellery sector is characterised by a pull market vis-à-vis a push market. In this context, given the numerous pull factors such as rising income levels, changing attitude towards spending, growing proportion of working women, increased youth spending, the sector will see an increasing demand in the coming years. Further, the sector will be boosted with almost 150 weddings expected in the period 2011–2021 in India considering the 35–40 percent share of jewellery related spend in wedding expenses. India processes about 60 percent of the world's diamonds by value and has a highly skilled workforce vis-à-vis the rest of the major manufacturing centres across the world.

Weakness

Poor working conditions — poor infrastructure and prevalent health and safety concerns, a predominantly unorganised and informal setup of the sector, and its highly labour-intensive nature with low mechanisation are roadblocks to the growth of the sector. With quality increasingly emerging as a parameter in the decision making process for consumers, the industry has to cater to quality related concerns as well.

Opportunity

Increasing internet penetration and acceptance of online transactions has given a boost to online retailing in the jewellery space. While this is a nascent sales channel at present, the opportunity is immense. Established domestic players are increasingly adding online sales channels while standalone multi-brand online commerce retailers are also making their presence felt in the marketplace.

Quality and hallmarking of products is increasingly embedded in the mindset of consumers, providing organised players an opportunity to leverage the same USP to attract potential consumers and garner a higher market share. Further, despite the high demand of jewellery products in the country, the low per capita consumption is still low compared to countries such as US, Japan, and Italy.

With increased adoption of mechanisation, the industry can target greater quality and quantity of products especially with revival of the export markets.

Threats

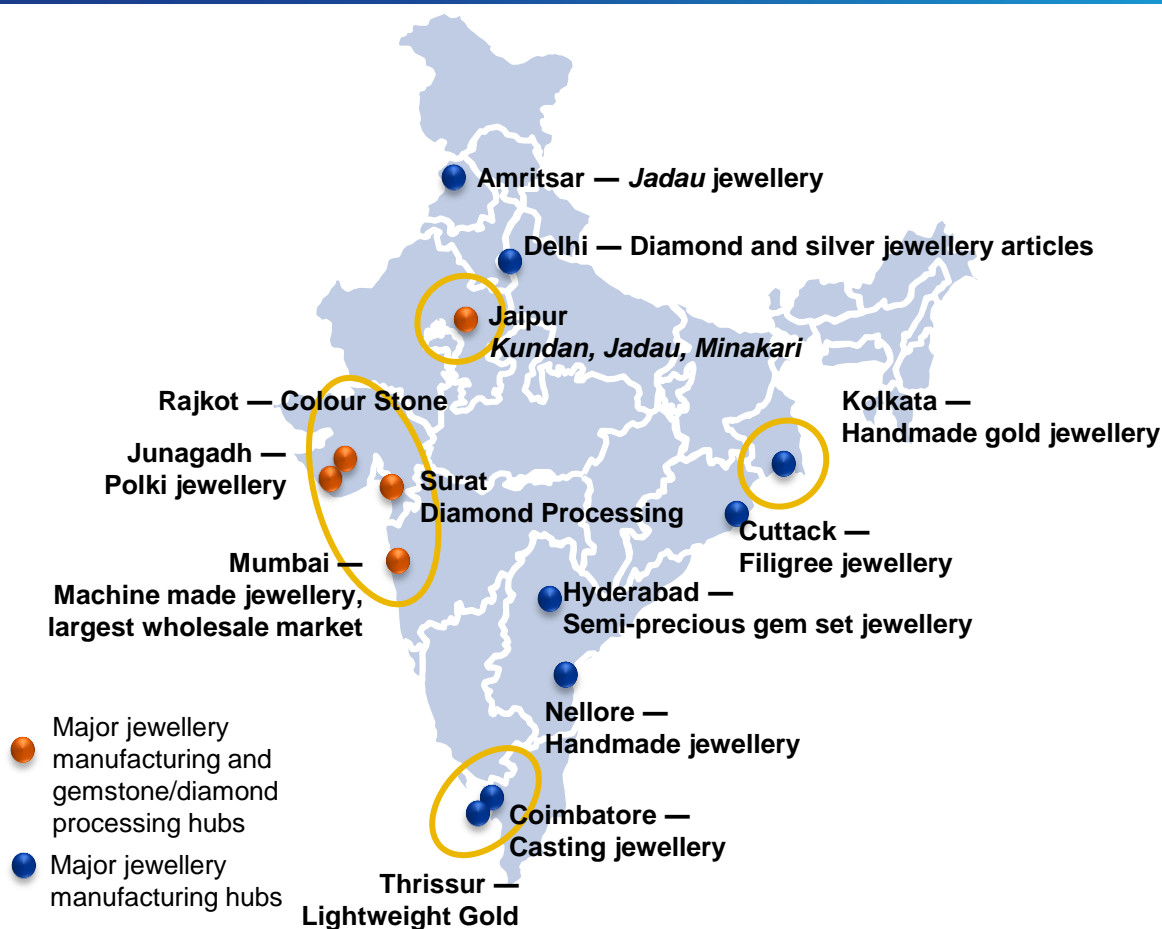
The Indian industry is expected to face increasing global competition from countries such as Thailand, Belgium and Israel in coloured gemstone and diamond processing, and Thailand and China in jewellery manufacturing. Further, the sector is highly dependent on import of raw materials such as gold, silver, platinum metals, diamonds and gemstones which affects the foreign exchange position of the country. High import duty and the 80:20 export rule have impacted the sector greatly in the 2013–14 financial year.

With prevalent poor working conditions and major health and safety concerns, the attractiveness of the sector as an employer of choice has greatly reduced. The skilled workforce is retiring at the age of 40–45 years due to health issues and their future generations are not keen to join the sector, instead switching to other sectors such as retail, IT-BPO, entertainment, etc. This switch is also driven by the perception that these sectors are high-remuneration-low-effort when compared with the gems and jewellery sector.

Geographical Clusters

Geographical Clusters

Employment clusters in India



Source: KPMG Analysis

More than two-thirds of the sector workforce in India is employed in processing and manufacturing parts of the value chain. These workers are employed in certain clusters, as indicated in the map above. The retailing workforce is spread across the country from metros and tier-I cities to villages in rural areas.

Processing and manufacturing clusters

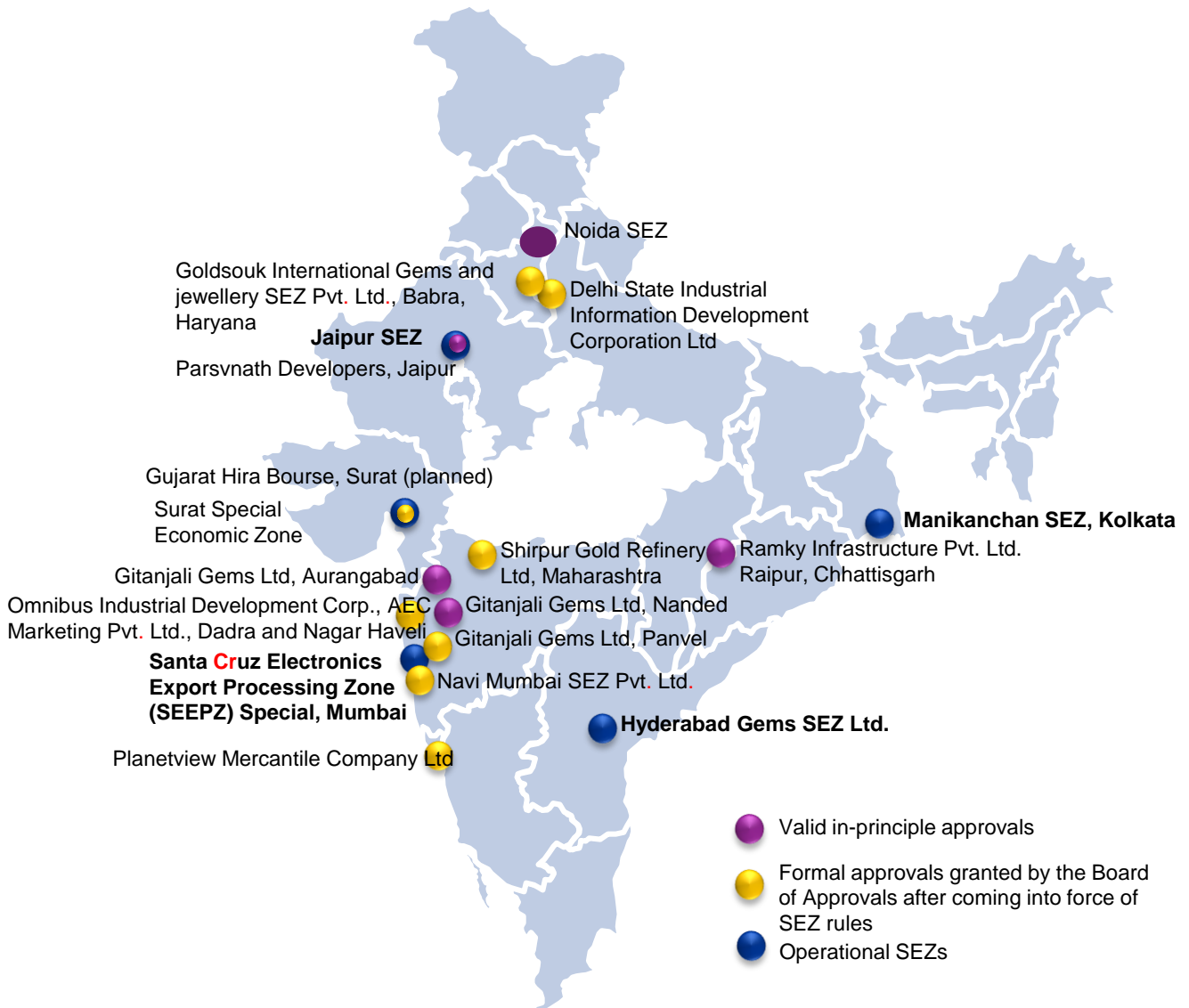
Employment is concentrated in the states of Rajasthan, Gujarat, Maharashtra, West Bengal and the southern belt of Kerala and Tamil Nadu. Jaipur and Amritsar are known for *kundan-jadau* jewellery with Minakari work while Delhi-NCR is known for silver jewellery. Further, Jaipur is also one of the largest coloured gemstone cutting and polishing centres in the world. Surat is the world's largest diamond processing centre and processes about 85 percent of the rough diamond imports of India. Surat has a large pool of workforce and is also home to the world's leading diamond institute, the Indian Diamond Institute (IDI).

Mumbai, besides being the largest trading hub and wholesale market in the country, is also a key centre for cast and diamond-set jewellery. SEEPZ in Mumbai alone accounts for almost a quarter of the jewellery imports of USA, the world's largest jewellery consumer.

Thrissur is a hub for lightweight plain gold jewellery, a style traditional to Kerala, while Coimbatore is known for electroformed jewellery. Kolkata region is known for handmade gold jewellery. Its importance also stems from the fact that a large share of the skilled artisans in the country are from this region. However, recent times have seen a dwindling of this supply due to a reduction in inherited skills.

Geographical Clusters

India has multiple operational SEZs focused in the sector and many others expected to operationalise in the coming years



Source: SEZ India, Ministry of Commerce and Industry, KPMG Analysis

Currently, there are about 22 G&J SEZs approved under the SEZ Act, 2005, throughout India. Out of these, five are operational, four have valid in-principle approvals and 12 are at the formal approval stage.

Therefore, the focus of investment is concentrated in Maharashtra, followed by Gujarat and Rajasthan. These areas will require skilled manpower and are in line with current employment clusters indicating that these legacy areas will continue to be employment destinations for manpower supply.

Demographic Characteristics of Workforce

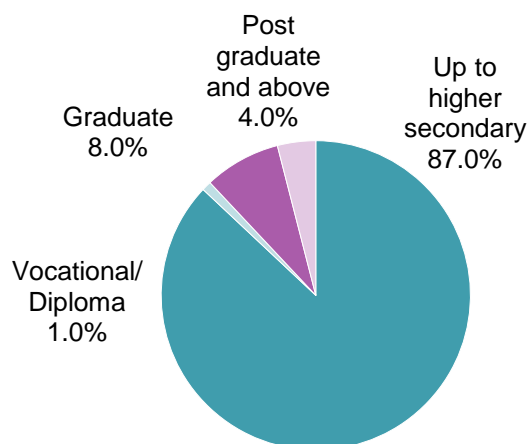
Demographic Characteristics of Workforce

Education profile of workers in processing and manufacturing sub-sectors

Stone processing and jewellery manufacturing units typically employ men from the economically weaker section of society. They are aged between 18–40 years and are school dropouts with minimal education. This is largely due to the low entry barrier for jobs in such units.

Recent years have seen an increase in the hiring of women in manufacturing units due to the rising prominence of wax work where speed and delicate handwork, characteristic of females, is key.

Within jewellery manufacturing, manpower for roles with a higher skill requirement are typically sourced from the Bengal region while other roles are staffed from local areas.



Source: KPMG Analysis

Attractiveness of the sector as an employer of choice for the youth

Processing and manufacturing sub-sectors of the gems and jewellery industry are fast losing their attractiveness as employers of choice in the youth's minds. This is primarily driven by the high-stress nature of the sector, health and safety concerns in the workplace, and the relatively low remuneration-to-effort-required ratio.

A high value is attributed to personal integrity and discipline in the workplace. Coupled with strict security and long working hours spent in deplorable working conditions, the work environment is highly stressful. Also, a shop floor worker typically retires or exits the sector at the age of 40–45 years, more often than not with some medical condition or the other. Health concerns have led to a reduction in transfer of inherited skills from one generation to another. This implies that the younger generation is not being skilled in the trades of the sector and the older generation themselves is encouraging them to join other sectors for a relatively better quality of life. This is further compounded by the higher attractiveness of sectors such as retail as they are perceived to have a higher remuneration-to-effort-required ratio. A significant share of establishments in the processing and manufacturing sub-sectors are unorganised in nature. A typical establishment would be a small-scale and independent player with less than 20 employees operating out of an area less than 200 square meters.

Working conditions

Given the high requirement of working capital, employers typically have limited resources for investment in the working environment. Such setups employ processes that are not at the cutting edge in terms of use of materials and technology. This lends to the use of hazardous chemicals and gases which are toxic and chronic exposure to them can cause lung tissue damage, kidney damage, lung cancer and prostate cancer, among other medical afflictions. Symptoms of such diseases are hard to detect before contracting them. With little or no stress on health and hygiene factors, the health and safety of workers is at risk.

Attrition

Attrition in terms of exits from the sector have traditionally been on the lower side (~1 percent). However, the global recession years of 2008–10 did see large lay-offs. Within the sector, attrition faced by employers is between 5–10 percent. Considering a large portion of the workers in each cluster are from the Bengal region, migration is a major factor in attrition. Workers generally leave employment to move back closer home.

Demographic and workforce characteristics: processing and manufacturing sub-sectors

Seasonality

While demand is present across the year, special occasions and festivals such as Akshaya Tritiya, Diwali, and Durga Puja among others, lend a seasonal nature to consumer demand. This is largely due to the high volume demand at these times. As compensation of workers is linked to their productivity (Processing: number of stones cut and/ or polished; Manufacturing: tonnes of raw materials used in production of jewellery), they are financially impacted during relatively lean months. Additionally, summer months also see consumers spend a higher share of disposable income in leisure activities such as holidays and vacations, reducing the outlay for jewellery products, impacting the employment in smaller enterprises.

Training Initiatives

While the larger players have well defined in-house training programmes spread over a 6–12 month period, the smaller independent players rely, if at all, on apprenticeship or on-the-job learning models to impart informal training. These models take a longer time to upgrade skills such as steadiness of hand and working on different metals and materials, but provide little or no exposure to modern processing and/ or manufacturing techniques.

Career progression



Trainee: New hires typically undergo an apprenticeship under a skilled/ semi-skilled worker i.e. An experienced full time employee of the employer. A trainee typically spends between 6–12 months learning specific trades. Basic skills such as steadiness of hand and working with different metals and other raw materials are imparted to trainees. Remuneration offered to a trainee is typically between INR6,000 – 8,000 per month.

Independent worker: With increasing comfort while working with different metals and a higher accuracy of product with design, a trainee is given independent charge of work. This typically involved reduced supervision and greater ownership of assigned work. An employee in this role will typically have between 3–5 years of work experience on the shop floor.

A fresh independent worker usually works on low value products with higher value products being assigned to him/ her basis the quality of work. Quality of work is assessed on parameters such as accuracy of product to design, time required, minimal wastage of raw materials, among others. Further progression is dependent on these parameters.

Semi-skilled/Skilled worker: A semi-skilled/skilled worker is one who is capable of working independently with minimal oversight from supervisors and has high levels of effectiveness and efficiency in his/ her work. Such a worker typically works on highly intricate product designs and has low turnaround time. With more than 5 years of work experience on the work floor, he/ she is also one who guides independent workers and trainees, helping them in learning and performance improvement. Depending on performance, a semi-skilled/ skilled worker may earn between INR25,000–1,50,000 per month.

Supervisor/independent enterprise: A skilled worker in the sector after about 10 years of experience, either chooses to stay on as an employee in a supervisory role or leaves employment to set up his/her own small scale processing or manufacturing unit employing about three to five workers.

Workforce in retail

The lion's share of the 350,000 jewellery retail outlets in the country are small-scale independent outlets run on a proprietorship or partnership model. Typically, such an outlet employs about three people viz. a proprietor, sales executive and a helper.

Traditionally, the sub-sector workforce has been dominated by males, although recent times have seen an increasing share of women. Additionally, unlike the processing and manufacturing sub-sectors there is a higher educational background requirement in the sector in recent times. This is driven by the share of sales function in the workforce.

With such high value of the products on offer, the expectations of the clientele need to be understood and met by the customer facing staff. Therefore, employers are increasingly seeking two skills in the employees that they hire viz. customer service orientation and speed and ability to grasp and gain knowledge about the product portfolio in the sector to establish a connect with the customer.

Considering the skill set required in jewellery retail is similar to that in retail segments of other sectors, employers are seeing a greater churn between the luxury, accessories and apparel retail. This attrition, pegged between 25–30 percent annually, is primarily due to a lack of focus on social security and lack of visibility on career progression.

As a general practice, remuneration for a sales personnel is fixed with a variable component dependent on sales concluded, they are financially impacted during the relatively lean months of the summer.



Training Infrastructure

Supply institutions in the sector primarily cater to organised players. This is partly because of the mechanised process flows and large production units they operate. With high working capital employed, maintaining high productivity becomes critical, driving the need for a highly skilled workforce.

Due to a variety of challenges such as low attractiveness of the sector, high fees, poor trainer quality, the quantum of supply available to the sector from the current capacity of supply infrastructure is insufficient to meet demands of the industry. Given the increased competitiveness in the global space with the emergence of China and Thailand as credible threats to the Indian industry, having a skilled workforce will be critical to, firstly, sustaining and increasing prominence in the global scenario in the long-term.

With little private investment on the manpower supply side, the sector is dominated by public institutions and government-run skilling schemes. The linkages between the industry and the institutes need to be strengthened with a general mistrust reflecting on both sides for the other. The institutes perceive a lack of respect as their trained graduates are not given a premium over untrained employees. The industry believes the quality of trained graduates coming through from institutes is not up to expected standards.

Specifically in the retail side, with such a high focus on customer service orientation and need to building a connect with the consumer in an increasingly competitive market, the workforce lacks the skill to accomplish this. The supply capacity is insufficient to meet the demands of the 1.5 million strong current workforce.

Employers engaging in training

The larger players in the organised space have taken steps to ensure their workers are quipped with the right skill sets and environment to foster a positive growth in productivity and output. With formally structured programmes for their periodic intake and regular skill upgrade plans for existing workforce, such initiatives have added value to the quality of work in terms of the finished products.

Trainings in the processing and manufacturing sub-sectors are aligned to operations process line and working with different materials. Further, there is a greater focus on standardisation of processes in the interest of easy understanding and high productivity.

In the retail side, training programmes have a greater focus on customer service orientation viz. understanding the customer, his/ her needs and meeting them in a knowledgeable manner. Other focus areas include concluding sales, knowledge about the product portfolio, engaging with the customer towards identification of the right product-consumer fit, building a rapport/ professional relationship with the consumer, etc.

Non-standardisation of training curriculum and standards

With multiple types of training institutes and providers in the country, viz. general training institutes, in-house training by leading industry players, and government bodies and agency run skilling schemes, there is a variation in the quality of training imparted to students. This impacts their employability for job roles and the pay on offer to trained students.

Given the fragmentation and significant share of unorganised players in the sector, OJT model is the most prominent one in play. Entry level resources are hired as trainees and undergo an apprenticeship under semi-skilled and/or skilled workers who are responsible for imparting requisite skills and experience-based knowledge to them.

Training requirements for traditional artisans

The industry has seen an increasing shift to wax techniques from metal. Metal work in mould making and setting is far more difficult than working on wax in terms of skill requirement and time required. However, the industry is facing a paucity in the availability of workers skilled in metal work. Courses need to be designed around this and other such industry requirements, by the training side to train the required supply to meet the demands of the industry.

Low premium attached to prior training and skill development undertaken by candidates

Most employers in the organised space have in-house training programmes. They typically retrain their workforce upon hiring them, indicating that training curriculum needs to be re-aligned with prevalent industry standards. This creates a mismatch between entry-level employee aspirations and the industry's pay scales on offer.

Up till recently, skills were passed on from one generation to another in the same family. The younger generation would typically join the same establishment as the older generation, and employers would willingly accept the level of training and the skills developed by the prospect employees. This model was the precursor to the apprenticeship model in place across the industry. With no involvement in training institutions, there is a general mistrust in the quality of trained manpower coming through and therefore, retraining is undertaken in the industry.

Challenges in establishing training infrastructure

The raw materials and machinery costs are very high, driving up the costs associated with establishment of training institutes. Even short-term courses have fees on the higher side. Also, such institutes are generally located in and around employment clusters, thus, students from rural areas often do not see merit in migrating to such areas where the cost of living is much higher. High cost of establishment leading to higher fees coupled with living costs, creates a high entry barrier which lowers interest levels of potential students in getting training in trades of the sector.

Secondly, the lack of quality trainers is another challenge faced by training institutions. Trainers are typically skilled workers with 10–15 years of experience in the sector. While they may be excellent workers themselves, a lack in the ability to teach and impart knowledge in a productive manner is felt. The limited supply of quality trainers implies difficulty in retaining them due to the high demand for such candidates both from training provider and employer side.

Lastly, while the training institutions may try to match the demand of the industry by taking in the requisite number of students for training, with limited awareness of job roles, the challenge for both the industry and the institutes side is to motivate students to take up the job and continue in it.

Skill training capacities created by NSDC

Partner	Proposed training capacity till 2022
Aptech	0.39 lakhs
IIGJJ, Jaipur	0.18 lakhs
Grand Total	0.57 lakhs

Current level of capacity creation is limited with only 0.57 lakhs training capacity created till 2022

Region	Trained till August 2013
Agra	1
Cuttack	2
Gr. Mumbai	1
Hanumangarh	1
Jaipur	876
Kota	1
Patiala	1
Grand Total	883

Source: NSDC

1 Indian Diamond Institute (IDI), Surat

Established in 1978, IDI is one of the leading institutes in the field of diamonds, gems and jewellery. It offers diploma, certificate and correspondence programme in segments such as diamond, jewellery and gemmology. It also offers correspondence programme in each of these categories. Its strong research base and infrastructure have earned its recognition as a Scientific and Industrial Research Organisation (SIRO) from the Government of India. It is also affiliated to reputed institutes in the UK and Belgium to provide global exposure through its courses. About 350 students are enrolled in it

2 Indian Institute of Gems and Jewellery (IIGJ), New Delhi

IIGJ is a non-profit educational project of GJEPC and was established in 1986. It has various sister concerns in India (Andheri, Taradeo, Jaipur and Surat). It has trained over 8,000 design and 400 manufacturing and gemology students since its inception. It offers courses in jewellery design, jewellery manufacturing and gemology. IIGJ is the first training partner of the National Skill Development Corporation (NSDC) to impart training in various skill areas of the sector

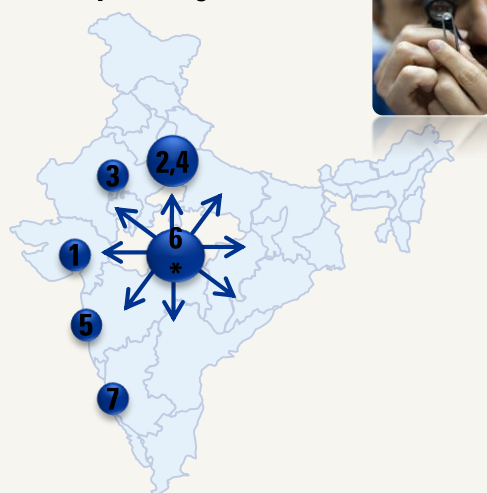
3 Gem Testing Laboratory (GTL), Jaipur

GTL was established in 1972 and offers its courses through the Indian Institute of Gems and Jewellery (IIGJ), Sitapur (near Sitapur SEZ). It offers courses in areas such as design, production technology, gemology, business, computer techniques, gemstone polishing and cutting. It is also affiliated to the Gemstone Institute of America (GIA).

4 Jewellery Product Development Centre, Delhi

This centre conducts seminars and workshop-cum-training programmes for the jewellery industry, offering technical assistance in processes.

Key training institutes



*Note: GIA India is present in various states but is largely concentrated in Maharashtra and Rajasthan

5 Gemological Institute of India, Mumbai

The Gemological Institute of India is a non-profit Public Charitable Trust established in 1971 by the Gems and Jewellery Exporters' Association for the promotion, propagation and development of science of gemstones and research studies in India. The institute offers diplomas in diamond grading, gemmology and jewellery design.

6 Gemological Institute of America (GIA)

GIA was established in 1931 and is considered a leading global authority in gemology. It is a global organisation with presence in 14 countries through 11 schools, four research centres and nine laboratories. GIA India offers globally recognised courses in gemology, grading, design, merchandising and retail sales. It has trained more than 12,000 professionals through various campuses in 40 cities across India.

7 School of Jewellery Management (SOJM), Manipal

Established in 2005, SOJM trains students in G&J management subjects. It offers courses such as BBA, PG diploma and various short-term programme across processing, manufacturing and retail

Source: Institute websites, KPMG Analysis

Training Infrastructure

Initiatives undertaken by employers

Case study: Tanishq 'Karigar' centre — dignity at workplace

With bringing in professionalism in jewellery manufacturing at the vendors end to enable them to earn better and work up to 55 or 60 years of age from the current 40–45 years of age and to inculcate consistency in productivity, quality, purity in workplace processes, Titan Industries has established four 'karigar' centres at Hosur, near Bangalore, with an investment of INR20 crore

These centres, each spread over almost 12,000 sq. ft., provide 'karigars' with ergonomic workstations, air-conditions environment, controlled processes and safety provisions at the workplace. Further, care has been taken to prevent hazardous chemicals from affecting the 'karigars' in any way. For example, use of Indium solders has been introduced in place of Cadmium which is hazardous not just for the 'karigars' but also the end-consumers. Personal protection equipment (PPE) and exhaust with scrubbers for safe disposal of hazardous waste have also been incorporated into the workplace.

From the manufacturers side, the manufacturing systems employed would reduce gold-loss and ensure higher productivity for the 'karigars' enabling them to produce more and thereby earn for a prolonged period. All this is geared towards transforming the way plain gold jewellery is manufactured today.

The premises have hostels for comfortable accommodation, clean canteens which serve hygienic Bengali food to cater to the tastes of the pre-dominantly Bengali workforce employed in the sector, and ear-marked space for recreation. This ensures that the 'karigars' are made to feel at home during their stay at the premises. Further, they are provided with medical assistance, health insurance and periodic health check-ups to provide support and ensure the longevity of their working lifespan.



Benefits for employees

- Increased earnings due to reduction in gold loss
- Increased work life span leading to effective utilisation of 'karigar' skill
- Safe working environment reduced risk of illnesses due to occupational hazards
- Medical assistance, health insurance and periodic health check-ups on offer
- Increased attractiveness of the sector as an employer of choice for the current workforce as well as their future generations

Benefits for employers

- Consistency in productivity, quality and purity of finished product
- Reduction in gold losses and therefore, decrease in release of capital
- Higher productivity of workers leading to increased product count; targeted reduction in turnaround time by 60 percent
- High retention of 'karigars' with reduced workforce turnover enabling capacity building
- Attracting young talent

Training Infrastructure

Initiatives undertaken by employers

Study: Emerald Jewel Industries — stress on training and skill development

Emerald Jewel Industry is the largest manufacturer of jewellery in the SAARC countries. With expansion plans in place, the organisation has developed detailed training programmes and collateral for its workforce. With detailed guidelines for all processes employed on the shop floor, the organisation ensures no gaps remain in the understanding and execution of work, which contributes to high levels of productivity at all times. Trainers are long-term employees (8–10 years) of the organisation.

Production:

This one-year long training module is aimed at entry-level intake, characterised by local manpower around the age of 18–20 years with minimal education. The organisation believes they are easy to mould and onboard ~30 such people every month. Drop out rate from the training is relatively low at about 7–8 percent. This normally happens in the first month itself and thereafter negligible share of trainees drop out. The programme is targeted at imparting skills covering working with tools and raw materials, steadiness of hand and discipline in the workplace. After a two-week orientation, trainees undergo specific training for different trades such as wax-work, polishing, buffing, grinding, setting, etc. the organisation considers the graduates to have achieved 60 percent skill level.

Production support:

This module is targeted at training candidates in ancillary production activities such as ultrasonic cleaning, packaging and dispatching, tagging and labelling, among others. The intake is typically unskilled and 18–20 years of age with minimal educational background. The trainee graduates are put directly on the job at the end of the month long training programme.

Machining:

This module is to train workers for operations in the tool room and on the CNC lathe. The organisation hires fresh machinist graduates from ITIs. The three-month long module includes programme study in the first month and then two months of basic activity practice on brass metal.

Chemicals:

The focus of this module is on refining and casting processes. Trainees spend two months in the refining plant learning aspects related to use of hazardous chemicals in the work place. Special focus is put on handling chemicals and maintaining safety in the environment.

Productivity:

This module pertains to training supervisors whereby they can assist their team members in improving productivity to match the targets set by the organisation. This is a highly focused quarterly programme that each and every supervisor is expected to undergo.

Benefits for employees and employer:

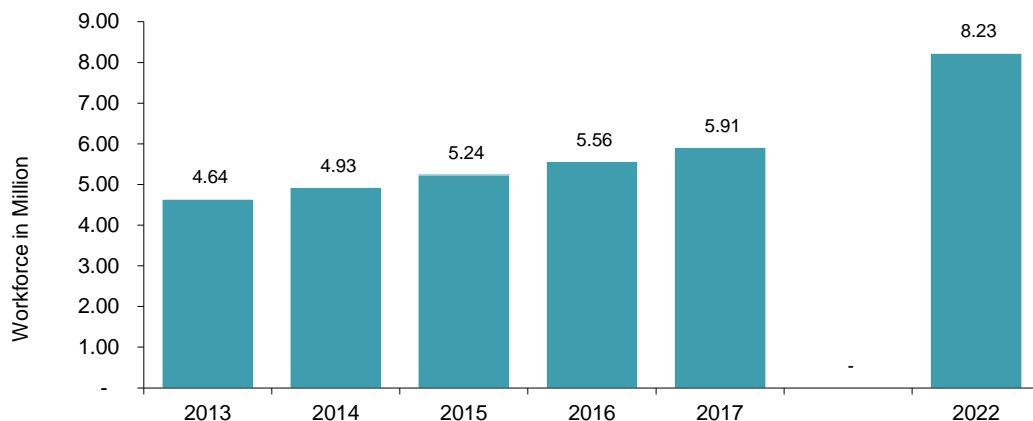
The organisation has seen a sharp reduction in attrition since the inception of these training programmes. This leads to longevity of work life span and higher productivity for the employer. Clear and transparent guidelines of processes ensure workers are able to understand their work better. Further, employees have visibility on career progression and thus, are motivated in their jobs. The positives of the programme for both stakeholders allow the organisation to focus on capacity building as opposed to multiple recruitment for the same jobs.

**Incremental Human
Resource
Requirements
(2013-17, 2017-22)**

Incremental Human Resource Requirements (2013-17, 2017-22)

Current workforce of 4.64 million in 2013 is expected to increase to ~8.22 million by 2022

Sector workforce in 2013–22

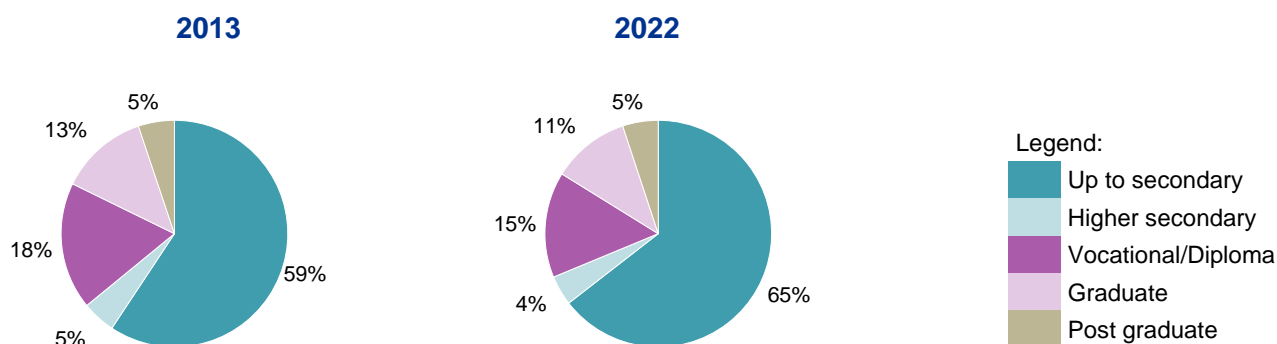


Source: Primary Interactions, KPMG Analysis

The sector currently employs more than 4.64 million employees and is slated to employ more than 8.23 million employees by 2022. This implies additional creation of ~3.59 million jobs in the nine-year period.

The period 2013–17 will see a slower rate of growth in employment vis-a-vis 2017–22 due to the repercussions of the global recession of 2008–09. The sector will bounce back and will require more workforce in the latter period viz. 2017–22.

Educational background wise split of the workforce in 2013–22



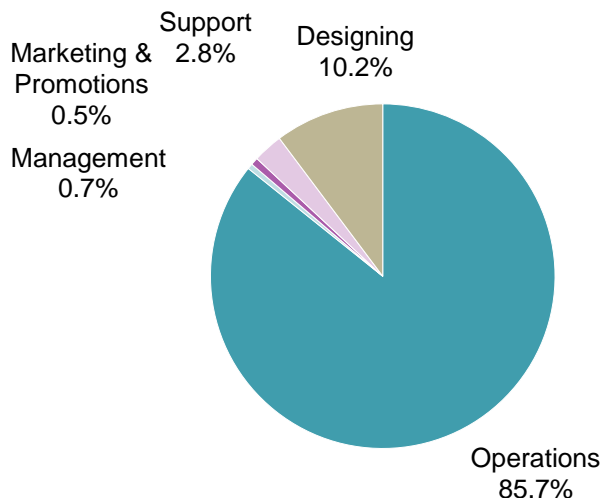
Source: Primary Interactions, KPMG Analysis

An analysis of the breakup of workforce by educational background highlights increasing share of employees with minimal education requirement. This indicates that roles on the shop floor, which typically require no prior formal education, will see an increased demand of manpower compared to managerial roles.

Incremental Human Resource Requirements (2013-17, 2017-22)

Diamond processing

Division of workforce by functions in 2013



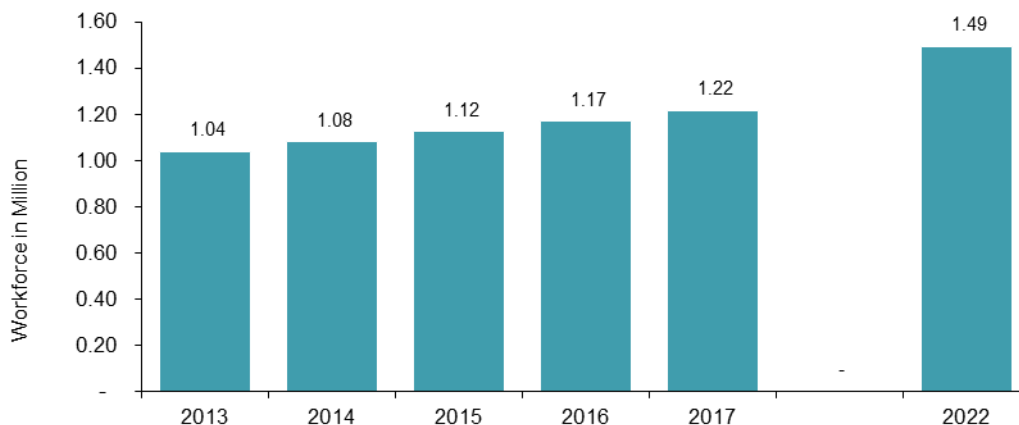
Within the diamond processing sub-sector, almost 86 percent of the workforce is employed on the shop floor in operational roles.

The second-largest function-wise team is the design team which accounts for a shade more than 10 percent of the employed workforce.



Source: Skilling gems and jewellery Sector, GJSCI Report Prepared by IMaCS, KPMG Analysis

Workforce projection in 2013–22



Source: Primary Interactions, KPMG Analysis

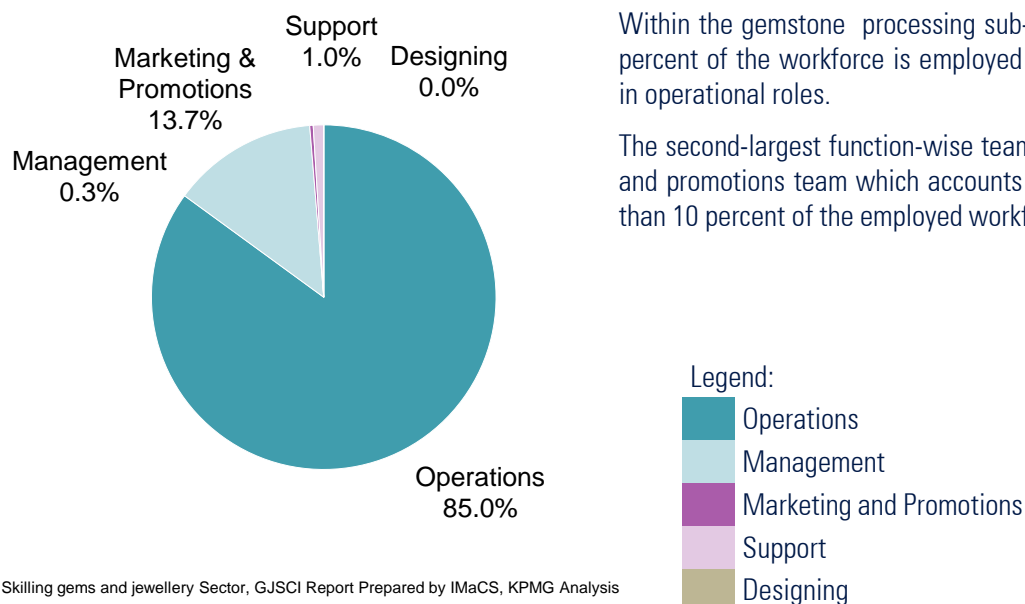
The demand processing sub-sector currently employs ~1.04 million employees which is expected to reach to 1.49 million by 2022

This increase will be driven by India's prominence in the global diamond processing market and increasing involvement of players in capturing a segment of the high-value diamond processing segment.

Incremental Human Resource Requirements (2013-17, 2017-22)

Gemstone processing

Division of workforce by functions in 2013

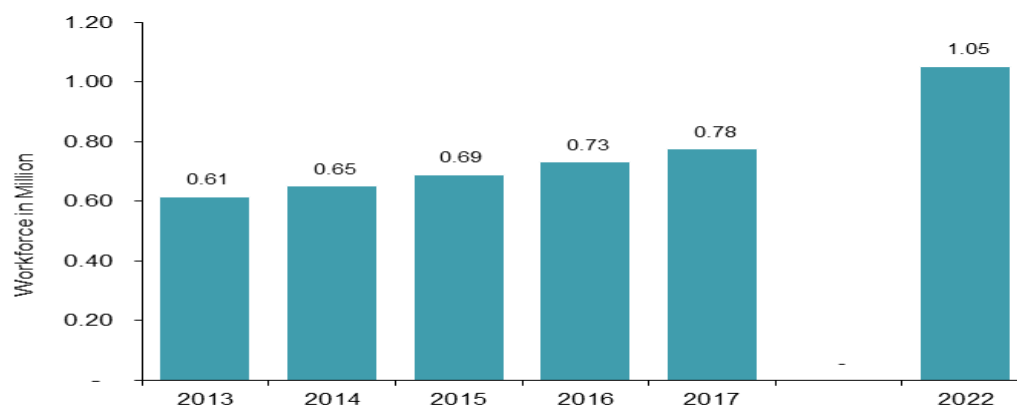


Within the gemstone processing sub-sector, almost 85 percent of the workforce is employed on the shop floor in operational roles.

The second-largest function-wise team is the marketing and promotions team which accounts for a shade more than 10 percent of the employed workforce.

Source: Skilling gems and jewellery Sector, GJSCI Report Prepared by IMaCS, KPMG Analysis

Workforce projection in 2013-22



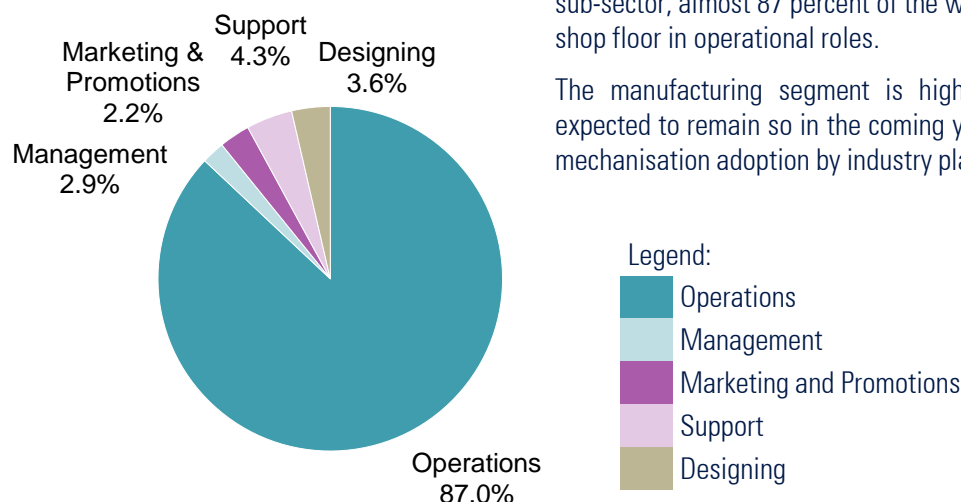
Source: Primary Interactions, KPMG Analysis

The gemstone processing sub-sector currently employs ~0.6 million employees which is expected to almost double in the nine year period 2013–22 to ~1.05 million. This increase will be driven by India's prominence in the coloured gemstone processing market.

Incremental Human Resource Requirements (2013-17, 2017-22)

Handmade gold and gem-set jewellery manufacturing

Division of workforce by functions in 2013

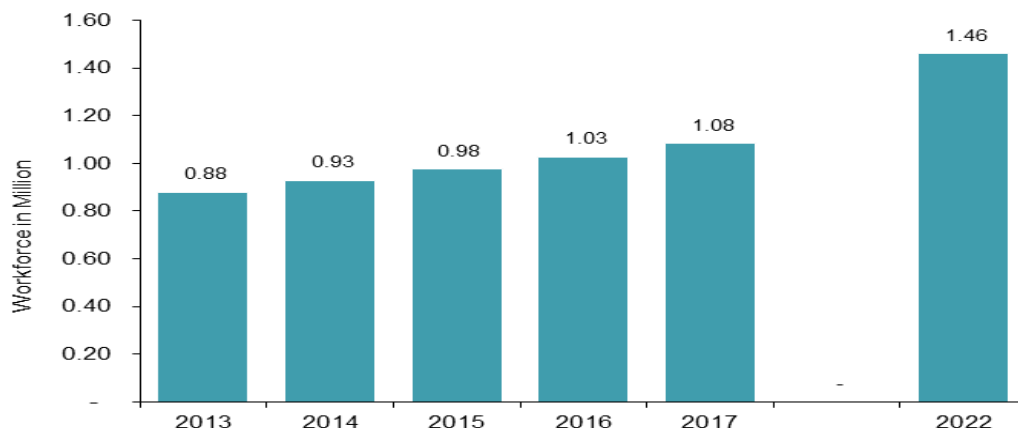


Within the hand-made gold and gem-set jewellery manufacturing sub-sector, almost 87 percent of the workforce is employed on the shop floor in operational roles.

The manufacturing segment is highly labour-intensive and is expected to remain so in the coming years before high degrees of mechanisation adoption by industry players.

Source: Skilling gems and jewellery Sector, GJSCI Report Prepared by IMaCS, KPMG Analysis

Workforce projection in 2013–22



Source: Primary Interactions, KPMG Analysis

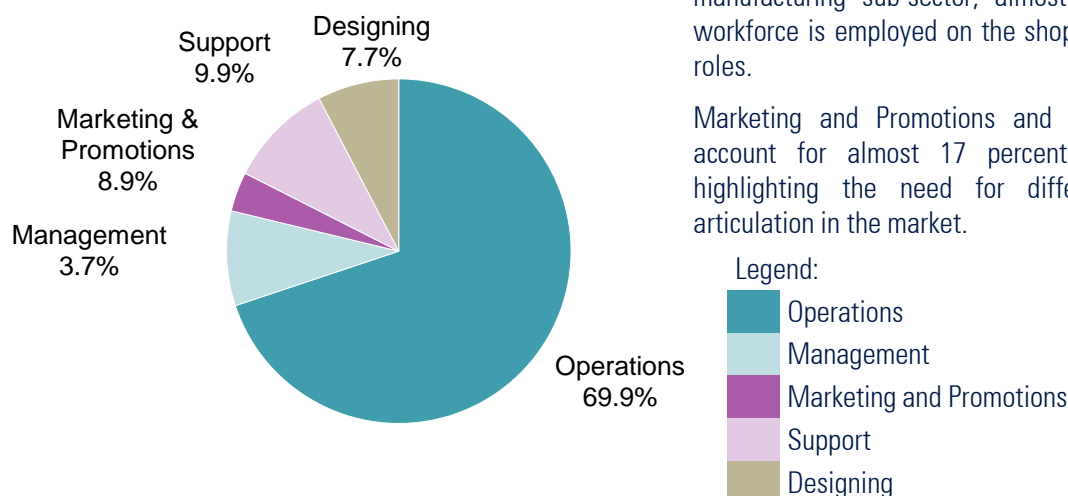
The handmade gold and gem-set jewellery manufacturing sub-sector currently employs ~0.88 million employees reach 1.46 million by 2022

Given India's standing in the global jewellery manufacturing segment, and revival of export oriented markets coupled with increasing demand in the domestic market, the sector will require almost double the current workforce as compared to the current times.

Incremental Human Resource Requirements (2013-17, 2017-22)

Casting and diamond-set jewellery manufacturing

Division of workforce by functions in 2013

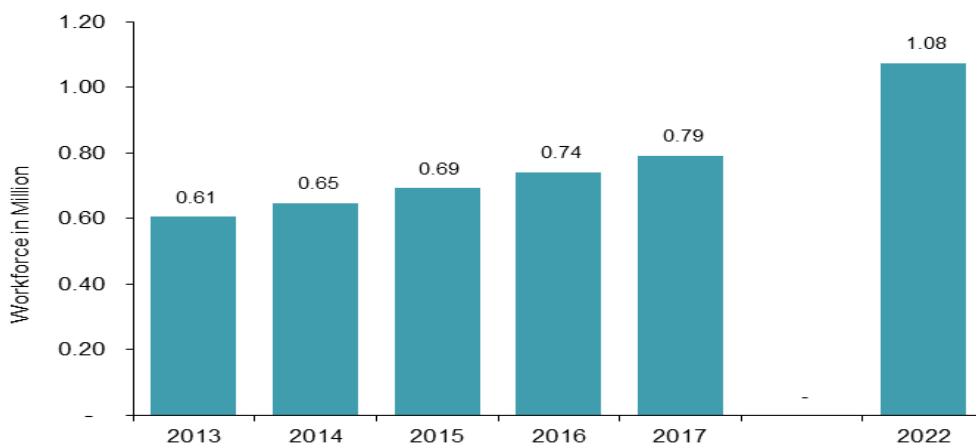


Within the casting and diamond-set jewellery manufacturing sub-sector, almost 70 percent of the workforce is employed on the shop floor in operational roles.

Marketing and Promotions and Designing functions account for almost 17 percent of the workforce highlighting the need for differentiation and its articulation in the market.

Source: Skilling gems and jewellery Sector, GJSCI Report Prepared by ImaCS, KPMG Analysis

Workforce projection in 2013–22



Source: Primary Interactions, KPMG Analysis

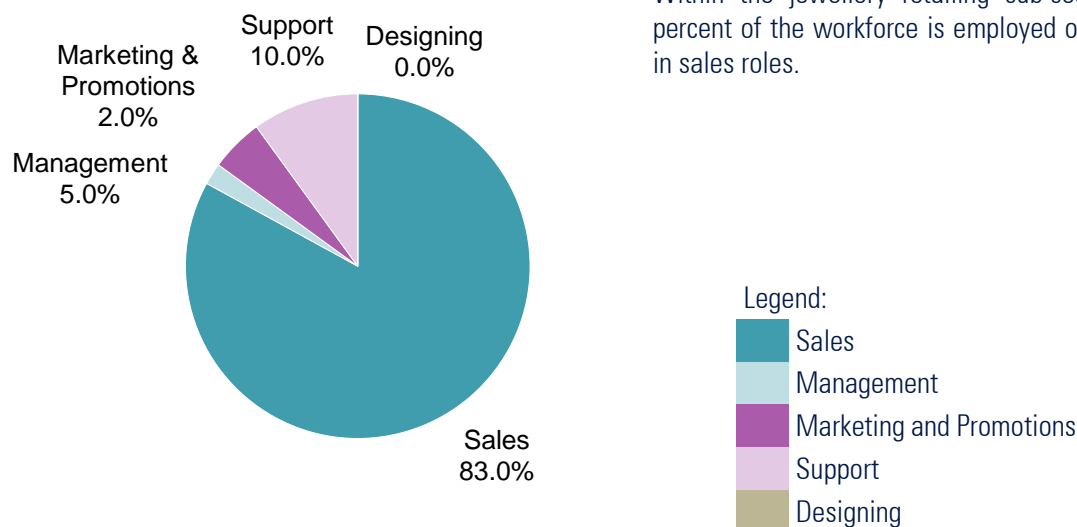
The casting and diamond-set jewellery manufacturing sub-sector currently employs ~0.61 million employees which is expected to almost double in the nine year period 2013–22 to ~1.08 million.

Given India's standing in the global jewellery manufacturing segment, and revival of export oriented markets coupled with increasing demand in the domestic market, the sector will require almost double the current workforce strength as in current times.

Incremental Human Resource Requirements (2013-17, 2017-22)

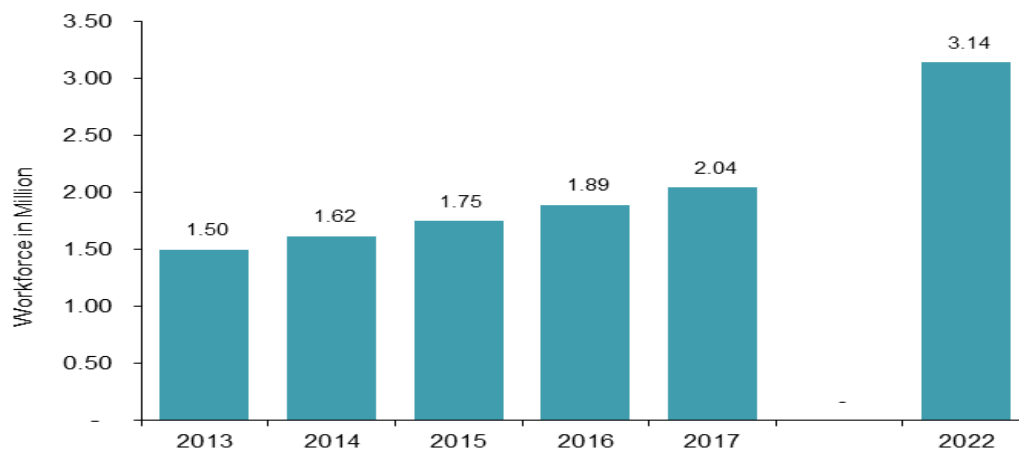
Jewellery retailing

Division of workforce by functions in 2013



Source: Skilling gems and jewellery Sector, GJSCI Report Prepared by IMAcS, KPMG Analysis

Workforce projection in 2013–22



Source: Primary Interactions, KPMG Analysis

The jewellery retailing sub-sector currently employs ~1.5 million employees which is expected to double in the nine year period 2013–22 to ~3.14 million.

Given the traditional role of gold and jewellery products in the Indian context, the sector will see increasing demand. Further, organised retailers are expected to increase their footprint across the country either via organic expansion or by use of franchisee or association models. To ensure standardisation in experience offered to the consumer, this will require skill development of the current and incoming workforce.

Identification of Job Roles

Identification of Job Roles

Critical job roles (1/3)

Job role/ function	Observations pertaining to skill gaps in critical roles
Assorter (diamond and gemstone processing)	Also known as Rough Assorter or Sorter, an Assorter segregates procured rough into different categories based on its characteristics. Within the industry, the quality of Assorters available is low with lack of knowledge that is required for identification of the grade of rough stones and to accurately sort diamonds as per international laboratory standards (stars and melle) being the largest challenges.
Metal setter (jewellery manufacturing)	Metal work is one of the toughest trades in the manufacturing sub-sector and thus, requires highly skilled manpower. Traditionally, metal workers — setters and model makers — came from the Bengal region but the supply of such manpower has gone down in recent years leading to concerns that the trade may die out soon. This reduction in manpower supply is driven by the fall in inherited skills with future generations preferring to work in sectors other than gems and jewellery.
Bench worker (manufacturing and processing)	Roles along the process line in processing and fabrication units are collectively referred to as 'bench workers'. The sector typically hires manpower via informal channels and thus, with minimal formal training in the trades of the sector. These workers have been observed to have a limited understanding of machines and tools necessary in their respective trades along with the need for quality control and incorporating it in day-to-day work. Further, within manufacturing sub-sector, the lack of said knowledge leads to lower productivity with manufactured products being found to be inaccurate with respect to the design leading to re-work. This is also driven by the inability to read designs accurately.
Quality control (manufacturing and processing)	Due to the low skills observed at the bench worker level, the need for quality control increases. This is to ensure that the quality of products/ work coming through from each of the trades within the process line meets the standards of the organisation. However, the industry has also seen a low ability of QC personnel to undertake the high level of due diligence required for quality checks. Typically the most skilled quality control personnel are placed towards the end of the process chain when the final product is assessed. This leads to the product being re-worked from the first step, negatively impacting the turnaround time of the line.

Identification of Job Roles

Critical job roles (2/3)

Job role/ function	Observations pertaining to skill gaps in critical roles
Design and product development (manufacturing and processing)	<p>The product development team is required to coordinate stakeholders such as customers, marketing team, production team and merchandisers to develop marketable and fashionable jewellery products. The Indian market is known for the variety of designs on offer vis-à-vis global markets. Thus, designers and product development personnel are required to have a hand on market pulse where trends need to be projected and built into the organisations annual product strategy.</p> <p>In the current scenario, the industry finds these personnel to lack in their knowledge and understanding of new market trends with products being created designed without either internal or external market research. Experienced and highly skilled designers are scarce and shift jobs frequently due to supply-demand scenario. Further, product development requires engineers to be brought in and consider viability of the design at the Hand Sketch stage itself before Coral and CAD stages to reduce rework and unproductive time.</p>
Production planning and control (PPC) (manufacturing and processing)	<p>The PPC department is responsible for planning and control of the process line in line with orders from buyers. The scope of work requires classic optimisation knowledge for smooth, effective and efficient functioning in terms of production, working capital, inventory implications, worker bandwidth availability, external market factors, etc. The department is composed of order takers, planning supervisors and production manager, and the primary skill found lacking across the roles is the lack of planning expertise which results in sub-optimal resource staffing and order taking which in turn impacts the overall productivity of the unit. Further, given the high working capital requirement, the planning and control team also requires a deep understanding of cost of capital and financial implications of high raw material inventory, which is lacking. This impacts the financial management and bottom line of the organisation.</p>

Identification of job roles

Critical job roles (3/3)

Job role/ function	Observations pertaining to skill gaps in critical roles
Sales associate (B2B)	The high value of products and impact on working capital requires manufacturers and processors to have a steady pipeline of orders at all times. This requires the B2B sales teams to be proficient in managing key accounts by developing and maintaining professional relationships with potential and existing buyers. However, the industry believes personnel in the B2B sales functions are lacking in skills to manage buyer accounts leading to fungible nature in buyer-supplier market.
Sourcing/ merchandising (retailing)	Retailers see the role of merchandisers as critical to the revenue of the stores as they decide on the product portfolio and mix. Merchandisers are required to have in-depth understanding of the market and future trends such that they are ahead of the curve and able to present a unique proposition to consumers. This understanding of new market trends is found to be lacking along with the ability to optimise the product portfolio basis seasonality and pull-demand factors.
Sales associate (retailing)	As a front of the office role, sales associates are revenue generators for retailers. They lack the basic knowledge of product portfolio in the sector. Further, they lack the ability to engage with consumers towards identification of the right product-consumer fit and advise them accordingly. Inadequate levels of education and lack of requisite personality traits are some barriers towards the right consumer service orientation levels expected. Further, since the retailing side sees negotiations from the consumer end prior to sales, basic mathematical and communication skills up to the mark of the brand communication expectation are required which are also observed to be inadequate in the current workforce.
Trainer	While trainers in the sector are skilled artisans themselves having spent on an average more than 10 years in such roles, the ability to teach and impart knowledge to shop floor workers in a way that is easy to understand and inculcate the same in daily work is lacking.

Identification of Job Roles

Diamond processing

Organisation structure						
Function	Job roles					
Rough assorting	Window Opener	Marker	Rough Assorter			
Diamond planning	Spectrum Operator	Inclusion Plotter	Designer/ Planner	Planning Supervisor	Planning Manager	
Stock control	Weigher	Data entry person	Issue/ Return Incharge	Stock Manager		
Rough cutting	Die fixer	Cleaver	Laser Operator	Blade Sawing Operator	Blade Sawing Supervisor	Laser Supervisor
Bruting and coning	Die Fixer	Manual Bruter	Auto Bruter	Supervisor-Bruting		
Blocking	Die Fixer	Table Cutter	Manual Blocker	Auto Blocking Mc. Operator	Superviso-Blocking	
Faceting and polishing	Die Fixer	Calibration Machine Operator	Girdle Polisher	Polisher-Bottom	Polisher-Top	Supervisor F&P/ QC
Boiling	Boiling Personnel					
Final assortment	Polish Assorter (Basic)	Polish Assorter (Advanced)	Supervisor-Final QC and Grading			
Marketing	Packager and Dispatcher	Marketing Manager	Sales/ Exports Manager			
Support	Security	Accounts	HR and Admin	IT	Training	
Management	Operations Manager	Procurement Manager	Strategy Manager			

Identification of Job Roles

Gemstone processing

Organisation Structure

Function	Job roles				
Raw material procurement	Supervisor — other proc.	Roughs proc. Manager			
Production planning	Order processor	Inventory manager			
Assorting	Supervisor — RA/ bagging	Manager - assorting			
Rough cutting	Rough cutter	Supervisor — RC/ QC			
Pre-shaping	Pre-shaper and calibrator	Final shaper and calibrator	Supervisor — shaping/ QC		
Faceting and polishing	Facet maker	Polisher (normal and girdle)	Engraver	Supervisor — F&P/ QC	New machine operator
Drilling	Driller				
Threading	Thread maker				
Grading and dispatching	Packager and dispatcher	Supervisor — final QC/ grading			
Wholesaling	Inventory manager	Sales executive	Procurement/ import manager		
Marketing	Sales/ export manager	Marketing head			
Support	Security	Accounts	HR and admin		
Management	Operations head	R&D manager	Business head		

Identification of Job Roles

Handmade gold and gem-set jewellery manufacturing

Organisation structure						
Function	Job roles					
Inventory management	Storekeeper	Locker manager	Raw material proc. Mgr.			
Metal alloying	Melter and refiner	Assayer and hallmarker				
Designing	Designer — hand sketch, basic	Designer — hand sketch, advanced	Designer CAD	Master maker (hand)	Merchandise in-charge	PD manager
Gold smithy (basic)	Goldsmith component and filer	Goldsmith frame and filer	Supervisor — frame and components			
Cleaning and polishing	Cleaner and polisher	Supervisor — cleaner and polisher				
Setting	Sorter	Setter	Jadau setter	Supervisor — setting		
Gold smithy (advanced)	Goldsmith — carving/ embossing/ repoussing	Goldsmith — enamelling	Goldsmith — kundan			
Quality check and dispatching	Tagger and labeller	QC inspector				
Marketing	Order processor	Sales and marketing head				
Support	Security	Accounts	HR and admin	Safety officer		
Management	Production manager	Promoter				

Identification of Job Roles

Casting and diamond-set jewellery manufacturing

Organisation structure					
Function	Job roles				
Designing and product development	Designer — hand sketch (basic)	Designer — hand sketch (advanced)	CAD designer	Merchandise incharge	PD manager
Master making	CAM operator	Master maker (hand)			
Procuring and assorting	Bagger and flueter	Diamond assorter	Inventory manager	Procurement manager — PM and diamond	
Wax model making	Wax tree maker	Wax piece maker	Rubber mould maker	Supervisor — waxing/ QC	
Wax setting	Wax setter (basic)	Wax setter (advance)	Supervisor — wax setting and QC		
Casting	Casting machine operator	Supervisor — casting and QC			
Filing and assembling	Filer and assembler	Laser machine operator	Supervisor — filing and QC		
Polishing	Polisher	Supervisor — polishing and QC			
Metal setting	Metal setting (basic)	Metal setter (advanced)	Supervisor — setting and QC		
Plating	Plater	Supervisor — plating			
Refining	Refiner				
Quality control	Final QC				
Marketing	Order processor	Tagger and labeller	Sales executive	Sales manager	Marketing head
Support	Security	Accounts	HR and admin	IT	House keeping
Management	Production manager	Operations head	Business head		

Identification of Job Roles

Jewellery retailing

Organisation structure				
Function	Job roles			
Inventory management	Labeller	Inventory manager		
Sales	Cashier	Jewellery RSA - basic	Jewellery sales - advanced	Floor manager
Product repairing/ re-making	Goldsmith (repairs)	Assessor		
Store management	Store manager	Merchandise incharge		
Marketing	Marketing executives			
Support	Security	House keeping		
Management	Senior manager	Promoter		

Recommendations for stakeholders

Recommendations for stakeholders

Recommendation 1: Promotion of awareness and training of the workforce on health and safety issues

- In this predominantly unorganised sector, there is little or no stress on health and hygiene factors and these workers are often exposed to harmful chemicals, fumes (such as Cadmium) and other injurious elements in their working environment, potentially causing hard to detect medical afflictions such as lung tissue damage, kidney damage, lung cancer, prostate cancer among other diseases.
- This is a major driver for reduction in transfer of inherited skills and therefore, low attractiveness of the sector as an employer.
- Issuing of safety kits to workers with daily-use equipment such as goggles, gas masks, gloves, lab coats, etc.
- Incorporating safety measures on the shop floor, imparting knowledge and training in safe workplace practices will reduce negative impact on health and help in retaining current workforce as well as attracting new youth

Recommendation 2: Improvement in workplace infrastructure viz. working conditions and environment

- Typically, the processing and manufacturing sub-sectors are characterised by dingy workplaces with 15–20 workers in a limited space. This impacts the morale and longevity of their employment span in the sector.
- Poor working conditions are also driving youth away from the sector where jobs in 'better' workplaces such as modern retail channels are more attractive.
- Better planned and equipped workplaces will help employers in retaining the current ageing workforce such that the incoming intake is able to learn quickly by leveraging their experience and knowledge.
- The benefits for both employees and employers from the Tanishq Kaarigar Centres serve as an example for the industry.

Recommendation 3: Setting up of training centres around alternative and current sources of manpower

- Certain work such as that with metal (setting, model making, etc.) require specialised skills.
- These highly skilled workers in the sector are from in and around the Bengal and Gujarat area.
- However, recent times have seen a reduced supply from these traditional sources of sector manpower.
- Such training centres will provide an avenue to increase awareness and attract new youth to the sector by showcasing career progression opportunities. This would further enable the industry with access to a larger talent pool mitigating the effect of reducing inherited skills.

Recommendations for stakeholders

Recommendation 4: Sensitisation of employers to invest in training/skill upgrading initiatives

- Unorganised and smaller organised players do not invest in formal employee training fearing attrition and increased remuneration expectation.

- Increasing awareness of the benefits of formal employee training programme will lead to greater interest from the employer side.
- Partaking in skill development initiatives in the work place is expected to lead to lower workforce turnover and a higher quality in output.

Recommendation 5: Development and pilot of skill development models in conjunction with industry and institutes

- With low industry-institute links present in the sector, there is a clear need for such associations to develop. Institutes face issues pertaining to current practices prevalent in the industry leading to imparting of training programmes of low relevance. The industry is unable to hire graduates of such training programme due to unsuitability of training undertaken and re-training requirement.

- Institutes may focus on enrolment and basic classroom teaching covering properties of metals and their use in the industry, health and safety in the workplace, process chain in relevant sub-sectors, etc.
- The industry on their part can contribute by providing students with simulation training in their factories.
- Such an association between manufacturers from the industry and training institutes draws on the strengths of both partners.
- The youth are provided with a better perspective on the industry and workplace characteristics, bridging the gap in employee and employer expectations as well.

Implementation of recommendations by agencies

S/N	Recommendations	Industry	NSDC	Govt.
1	Promotion of awareness and training of the workforce on health and safety issues			
2	Improvement in workplace infrastructure — working conditions and environment			
3	Setting up of training centres around alternative and current sources of manpower			
4	Sensitisation of employers to invest in training/skill upgrading initiatives			
5	Developing and pilot of skill development models in conjunction with industry and institutes			



cutting through complexity

This report is prepared by KPMG Advisory Services Pvt Ltd (KASPL).

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