

The Atlas Copco group has risen to challenge by being constantly Innovative & Agile

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1. Atlas Copco in Manufacturing With focus on Industry 4.0?

Recently Atlas Copco completed 147 years of its existence which by no means is a small achievement for any Industrial conglomerate. In this disruptive and uncertain era sustaining a leadership position in the industry is a great challenge. The Atlas Copco group has risen to this challenge by being constantly Innovative & Agile. Innovation being one of the core values of the group has helped it to retain its global leadership position over several decades.

True to the Atlas Copcos corporate message *“The Home of Industrial Ideas”* - the globally spread teams at Atlas Copco Tools & Assembly Systems have a vision to *“Accelerate the General Industry Transformation to a Smart Connected World”*. The teams at Atlas Copco are constantly working so as to bring sustainable value to industries everywhere by turning industrial ideas into smart manufacturing assembly solutions and innovative industrial tools. Thanks to its strong legacy of 147 years, the group has witnessed and surpassed the challenges of all the previous industrial revolutions and has emerged successful. Hence it is no surprise that today Atlas Copco is fully ready to embrace the current Industrial Revolution 4.0 and contribute meaningfully to all its customers in the manufacturing domain whether they belong to Automotive, Offroad, Electronics, Consumer goods, Energy, Transport or Aerospace segments.

Though the needs of different industrial consumers engaged in the assembly and manufacturing of different products could be different, there are certain common assembly related challenges faced by every industry. In order to be competitive and sustain the uncertain market conditions prevalent today, every manufacturing setup whether into making of a car or a mobile phone has to be flexible & agile. The set up should be able to manufacture a wide variety of products in a short span of time and in the most cost- effective manner.

However, in reality having flexible and agile manufacturing set ups is easier said than done. In their attempt to address the need for flexibility, most of the manufacturers are often saddled with system complexity which in turn leads to another crucial challenge and that is of having necessary human competence. To top it, all the above challenges for flexibility need to be handled in the most cost-effective manner so as to remain sustainable in the market. After all no manufacturer can afford to keep investing in new or flexible solutions and risk their bottom line. Hence their investment decisions today have to be *“thoroughly thought through”*



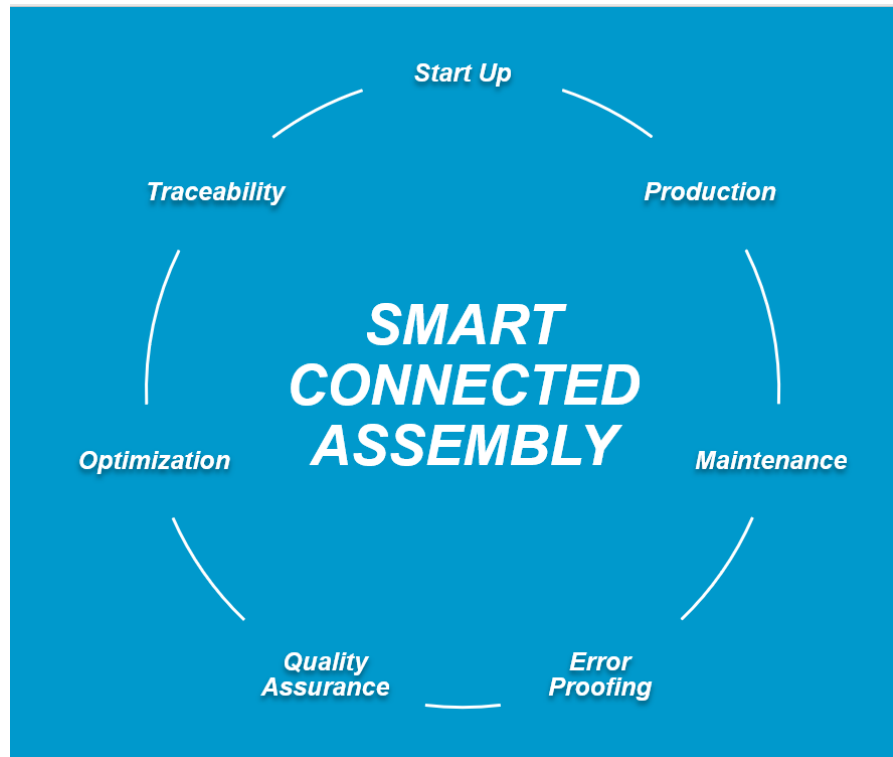
Fortunately Atlas Copco teams can contribute and become strategic partners in this journey such that their customers are able to emerge victorious from this challenging cycle of flexible assembly processes.

Having understood the above challenges faced by its customers as well as keeping the diverse needs within different segments in mind, the Atlas Copco team has come up with a well deliberated and structured approach to handle the needs of Industry 4.0. This concept known as **“Smart Connected Assembly”** is unique in itself. Not only does it take advantage of the ongoing digital revolution and use of latest technology through introduction of Ergonomic Wireless Tools, but it also addresses the very basic need of any manufacturing unit i.e continuous improvement and production optimization.

The concept encompasses and broadly revolves around the following six well defined strategic pillars which serve to enhance the overall productivity of any manufacturing set up :-

- **Increased Uptime** – Smart tools with enhanced and predictive maintenance intervals.
- **Reduction in defects** –Tools & solutions to ensure “Zero Mistakes and make First Time Right”
- **New product introduction** – Tools & Solutions enabling a Flexible manufacturing set up so as to
reduce the time to market for any new product
- **Improved productivity** – Smart tools with optimization capability and cycle time reduction based
on production data feedback and analysis
- **Human interaction** – User friendly ergonomic tools & solutions designed to identify & handle human competence issues
- **Reduction in Energy use** – Flexible & expandable electrical control systems to reduce energy use.

The circle **“Smart Connected Assembly”** depicted in the picture below describes various aspects in any manufacturing / assembly process. Either one or all of the above value pillars can be suitably applied to the respective stage in the assembly process as required.



This totalitarian approach is what sets Atlas Copco apart from the rest of the players in this fiercely competitive market. The wide range of solutions from Atlas Copco are easily adaptable and can fit into the manufacturer's existing set up. Investments done today are not likely to go waste since the offered solutions are scalable, upgradeable and designed keeping the future needs in mind. Rather than taking a giant leap by way of huge investments an Atlas Copco customer could choose to invest selectively on crucial or priority stations / stages in the above circle and can thereafter scale up as per need. This is certainly the best way for any manufacturer to remain invested in the future as well as safeguard their bottom line today.

2. Atlas Copco with focus on Additive Manufacturing?

The use of Additive Manufacturing (AM) could certainly be the next big change affecting the business dynamics of assembly and manufacturing. However, it is too early to say or predict as to what effect AM would have on conventional assembly methods and processes. Though there has been rapid development in AM in recent years, there is still a long way to go before this technology becomes a viable option.

As of today almost all 3D-printed parts require some type of post-processing. This suggests that in future even if AM takes center-stage and replaces the conventional manufacturing methods, the need for precision material removal tools will certainly exist to ensure smooth surface finish of every component. Fortunately Atlas Copco already has a very strong portfolio of products suitable for material removal. However keeping the needs of the future in mind, the teams at Atlas Copco are working on product enhancement of their material removal tools portfolio. The tools for the future are being designed so as to complement and be easily adaptable to futuristic technologies of the likes of AM.

AM in its present stage is not ready to handle the needs of mass production and hence conventional manufacturing methods certainly have an upper edge in this regard. Under such

circumstances AM does not seem to pose an immediate threat to the conventional assembly solution products from the Atlas Copco portfolio. Keeping in mind that the conventional nut & bolt or riveting process for assembly of parts might be replaced with more advanced joining technologies which could complement AM, the Atlas Copco group has already acquired some world reputed companies having expertise in adhesive joining. With this acquired competence it would be easier for the group to be prepared and face the advent of AM technology as and when needed.

As far as its in house product manufacturing goes, the Atlas Copco group certainly has a strong focus and prefers to use newer and environment friendly manufacturing methods rather than conventional methods which have the potential to deplete earth resources.

3. How do you see future trends in case of Tools & Assembly Solutions?

With the onset of this technological revolution - Industry 4.0 the following changes and future trends are a given for almost every industry:

- a) Increased Automation more flexible robots driving cost reduction and efficiency gains
- b) Big data, traceability, analytics and artificial intelligence for process improvements
- c) More rigid product compliance and regulations
- d) Increased use of Additive manufacturing such as 3D printing
- e) Virtual Reality & Augmented Reality in industrial applications

From the above it is very obvious that digitalization and data analytics would play (or is rather already playing) a very important part in shaping the future of industry. Hence it is necessary and of utmost importance to be ready and attain competence in data analytics.

Companies and organizations merely involved in supplying products with advanced technological features and compatible with IOT 4.0 requirements may find it challenging to thrive or even survive this disruptive onslaught of technology. The future needs and demands of the customers / tool users would be more comprehensive and complete solution based rather than being product centric or issue centric. Manufacturers offering compact, ergonomic and digitally advanced tools / solutions would be preferred for their sheer flexibility and data communication capabilities.

Having realized the above needs, the Atlas Copco group has already invested in suitable resources pre-dominantly software engineers and developers so that analytics is the core competence of the teams in future.

4. How do you see competition and foresee future?

Atlas Copco strongly believes in R&D investments to develop and introduce innovative products in the market so as to maintain its leadership position and stay atop its competition. However, the best or the most innovative products with unique features could fail to strike a chord with the users and customers, if not backed by prompt and efficient after sales service. The group lays strong focus on customer satisfaction and commitment and invests heavily into training and development of competent human resources to offer after-market support to its customers.

In India, Atlas Copco Tools and Assembly Systems has an impressive manpower ratio between Sales & Service of approximately 1:4 which is incomparable to any competitor in this business sector. Further the company has a wide network of capable and competent distributors spread across the country to cater to various customer needs.

Further its widely diverse product range provides a unique competitive edge to Atlas Copco. The company can cater to a customer need for a simple Socket to be used for fastening as well as support its customers by developing and providing highly advanced tailor-made Software Solutions to meet specific requirements. None of the competition has such a wide product range or global presence. The sheer diversity of its product range combined with the experience and competence gathered over several years of its existence helps to set Atlas Copco much ahead from the competition.