



## Prima Industrie, a large Italian group

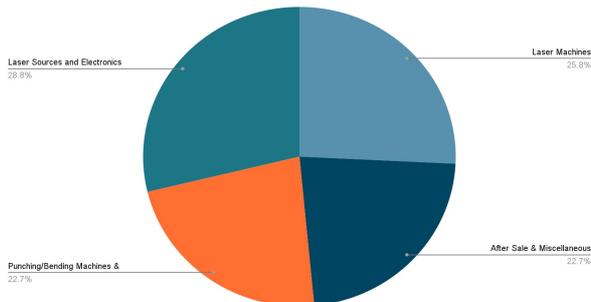
Prima Industrie was founded in 1977 and has been listed on the stock exchange since 1999.

Prima Industrie is a holding company with 8 factories, 8 R&D centers and more than 14,000 installations in 80+ countries, employing 1,735 people for an annual turnover of about 330M €

Its various revenue items are detailed below:

30% of its revenues are in North America, 57% in the EMEA region and 13% in the APAC region.

Prima Industrie Revenue Split



### STRATEGY

Prima Industrie's strategy is defined by the needs and demands of their customers, the market trends detected as well as internal R&D advances but also from their partners.

In addition to manufacturing and marketing high-performance machines, Prima Industrie's competitive advantage also lies in the optimization of their supply chain with a very precise upstream supply planning, a frictionless integration in the production chain and a meticulous downstream distribution management.

This organization is necessary to reduce the time and cost of supply to the customer because Prima Industrie operates on a build-to-order basis and must be able to be very reactive in managing orders.

R&D is essential to maintain their competitive advantage with about 6% of their turnover invested in R&D each year. With the observed growth of the company, this represents 5% additional investment in R&D each year.

The 3 priority areas of R&D for Prima Industrie today are

- Digital transformation
- Photonics
- Additive manufacturing

These sectors are targeted because they are growing rapidly: digital transformation has a CAGR of 23.6% until 2025, photonics a CAGR of 6.9% until 2025 and additive manufacturing a CAGR of 21.6% until 2023.

Prima Industrie is composed of 3 entities:

- Prima Power, which manufactures laser and metal sheet cutting machines
- Prima Electro, which manufactures lasers and electronic boards to control laser cutting machines
- Prima Additive, which focuses on metal additive manufacturing (powder bed and direct deposition)

Prima Industries' ESG values are strong and the company has identified several levers to develop them:

- Green machines
- Sustainable companies
- Team diversity
- Gender equality
- Business ethics

The selection of technologies in which they invest is done by TRL (Technology Readiness Level) analysis. They do not want to invest in immature topics, but rather target TRLs between 5 and 9, i.e. technologies that have already proven their interest and potential in real applications. Once the right partner is found to co-develop the solution, a new project is created.

### THE MESAP

Prima Industrie also develops its business through open innovation. Prima Industrie is part of MESAP which is the Piedmontese innovation cluster dedicated to smart products and manufacturing. They help to connect associated companies, research centers and universities in order to promote competitiveness and add value to the Piedmont region, with a particular focus on SMEs. Mesap works to promote and support products, intelligent processes and economic actors to strengthen technological and industrial production chains.

Mesap gathers 250 members including innovative start-ups, SMEs, large companies, research centers and universities that collaborate on various projects, with 4 working groups focused on very specific activities:

- Mechatronic products
- Mechatronic processes
- Advanced production systems
- IT, business, technologies



## PRIMA POWER AND THE COLLEGNO PLANT

We had the opportunity to discover the Prima Power entity by visiting their factory in Collegno. A strong capital investment was made to build this center which is able to generate as much electricity as it consumes thanks to solar panels, geothermal energy and home automation.

The site's main activity is the assembly of 2D and 3D cast iron cutting machines, as well as machines that allow the production of parts through their layer-by-layer additive technology, which we develop just below. A large part of their business also lies in the aftermarket services of their machine.

Prima Power is also a service company:

- They provide customer support (they provide equipment and follow up with customers because it is important to train them on these new technologies)
- the printing of parts is not done by Prima Power but they do production feasibility studies, so that their customers, who own the laser cutting and manufacturing machines, can start their jobs with confidence

### Layer by layer additive technology

It is about producing parts with complex geometry, no longer by cutting cast iron according to the desired shape but by adding material, layer by layer, thanks to lasers, like 3D printers. It is then possible to create exactly the parts required with a minimum of waste. This method improves the sustainability of Prima Power's business, which creates value for both Prima Power and its customers:

- They no longer need a storage facility as they can print their parts directly at the point of use - i.e. at their customers' premises. The customers buy their machines and produce their parts directly on their own site.
- The produced part is made of one piece, which makes it easy to produce parts with complex geometry. In addition, it allows to use only the amount of metal required for the part and to avoid producing waste.

This method removes many constraints when printing metal parts for machines, allowing the focus to be on the final objective of the part when designing it. This is particularly suitable for the aerospace industry, where very light machines are required. This material saving allows to reduce the weight of the parts used.

Furthermore, it becomes possible to repair the created parts exactly where the repair is needed, or to create a new functionality to a part much easier, which is a great advantage for the user, who saves time and money.

Their open innovation program is nevertheless open to other competencies:

- Research with training and education (they are part of the program of a Politecnico master in alternation), upskilling and reskilling (with Prima Academy), new patents
- New businesses and associations

Open innovation allows Prima Industrie to develop internal competencies to be more competitive with the market. Their ecosystem allows them to constantly evolve: they develop new technologies thanks to the start-ups they work with, and then have to train engineers to use them.

Sustainability and e-mobility are two megatrends on which Prima Industrie focuses its activities: 50% of its machines are dedicated to the production of materials for e-mobility:

- Lightness (thanks to additive technology, which we develop below)
- Resistance (they work with ultra resistant metal)

However, this layer-by-layer additive method is not always the most suitable. If the customer's business needs are more focused on productivity, and the production of simple parts, the traditional manufacturing method will be better suited. This is one of Prima Power's improvement levers: to increase the productivity of their additive machines to compete with traditional manufacturing methods when the needs are more important.

Prima Power is a pioneer in this additive technology and has filed a patent on the powder laser head.

The challenge in this new technology is both the change in equipment for companies but more importantly the change in mindset of customers from traditional technology to new technology.

### The assembly of the machines

Prima Power assembles two types of machines:

- A 2D sheet metal laser cutting machine
- A layer by layer part production machine

The specs of each machine are defined by the customer: all machines are produced on a build-to-order basis. However, they can anticipate certain orders in advance and produce the core parts of the machine (those that are not customizable), which they store until they are used. Between each order, several parameters can change: the shape and power of the machine, the sensors, the automation of tasks, etc.

The quality control of their machines is done piece by piece or by batch, before and after the assembly, thanks to cutting tests or axis accuracy tests (to the nearest 1000th). To produce these machines, some of their suppliers provide them with parts that have used their own additive machines to be produced. The loop is closed!

In the future, new generations of innovative machines will combine speed, automation, gamification (to make the use more intuitive and less physical). Machines tend to become more and more commodities, while IP is moving more towards a business that focuses on the data produced, and thus towards service.

