

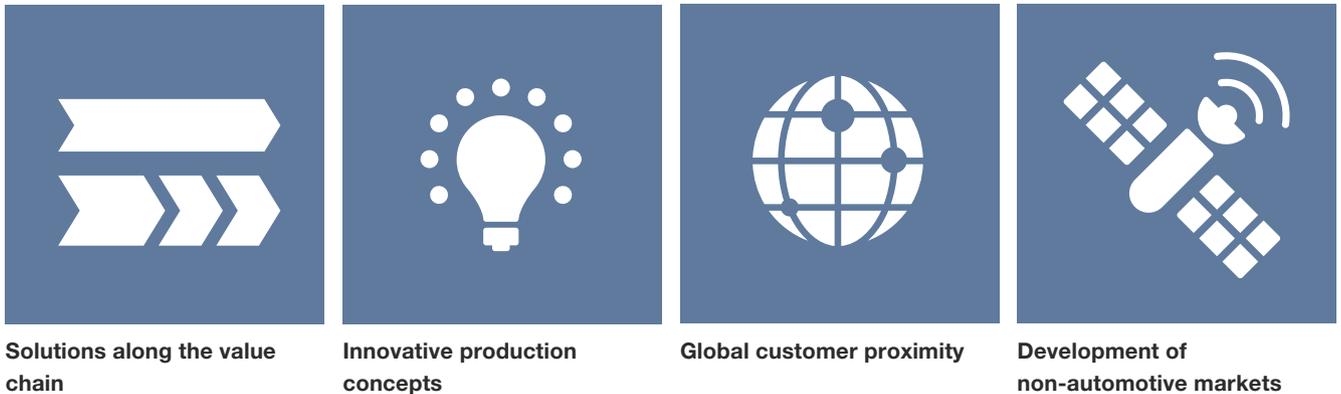
# BUSINESS MODEL AND STRATEGY

Developing solutions for automated wire processing in four market segments is Komax's strength. Here Komax is a pioneer, as well as a market and technology leader, and is looking to further consolidate this leading global position. To this end, it pursues four key strategic priorities. Above-average profitability and further sustainable growth are important objectives here. This goes hand in hand with environmentally conscious, socially aware, and responsible conduct towards all stakeholder groups.

Komax specializes in innovative solutions for all wire processing applications and for the testing of wire harnesses. The emphasis is on processes such as measuring, cutting, stripping, crimping, taping wires, and block loading. Komax offers its customers fully automated and semi-automated serial production models as well as customer-specific systems (for all degrees of automation and individualization), which optimize processes while at the same time increasing productivity. These are supplemented by an extensive range of quality assurance modules, testing devices, and networking solutions for the reliable and efficient production of wire harnesses. Digital services that increase the availability of installed systems and test their productivity also form part of the range, as does intelligent software. All of this provides ideal conditions for Komax's customers to consolidate and increase their competitive advantage.

## Four key strategic priorities

Komax has 45 years' experience in the development of customer-oriented solutions for wire processing. The company is both the technology and market leader in its field, with a market share more than twice that of its nearest competitor. In order to further strengthen this global leadership position, Komax pursues a growth strategy that involves four key priorities:



**Solutions along the value chain**

**Innovative production concepts**

**Global customer proximity**

**Development of non-automotive markets**

### Solutions along the value chain

Thanks to many decades of experience and its proximity to its customers, Komax understands their needs and offers them a comprehensive range of innovative and reliable automation solutions. The offering covers the most capital-intensive and critical processes of customer value chains – from measuring and cutting wires to the taping process and finally the testing of the completed wire harness (see pages 36 and 37). Komax relies not only on its proprietary developments, but also on the expertise of established partners. As a result, customers receive solutions for the key wire processing applications from a single source. This approach is unique in the world. Thanks to a number of acquisitions in recent years, Komax has succeeded in closing the existing gaps in its spectrum of products and solutions, with the result that it can now offer its customers end-to-end solutions. Komax has the broadest portfolio of solutions, which means that it can address a whole range of customer needs in a targeted way. To enable its customers to continue to increase productivity in the future, Komax works with a number of partners in the field of software, among others. Komax strives to network and manage the individual processes in the value chain, such as through Komax MES (Manufacturing Execution System) and Komax Cloud MES, a form of production control software for the wire processing industry 4.0, launched in collaboration with iTAC Software.

### Innovative production concepts

For a market leader like Komax, innovations are of maximum strategic importance. Komax has therefore been investing in innovations to optimize its existing product range, as well as in new developments, for many years (see pages 20 and 21). Every year, Komax channels some 8%–9% of revenues into research and development. All activities are systematically geared to customer needs and expectations. That is why Komax typically employs interdisciplinary teams – consisting of marketing experts, product managers, and development engineers – on innovation projects. For example, skillfully combining different processes and technologies reduces interfaces and lead times. At the same time, processing reliability is increased.

### Global customer proximity

Komax has 20 production sites located in Europe, Asia, North and South America, and Africa. The company provides sales and service support in more than 60 countries through its subsidiaries and independent agents, which gives it a unique global presence. It has set itself the goal of being close to its customers so that it can provide outstanding service combined with the shortest possible response and supply times.

To remain competitive, Komax's customers need to be flexible and select the optimal economic locations for their production processes – in other words, set up operations wherever their end customers are. This is also true for Komax. To ensure that it stays close to its customers, including when these customers choose to relocate, Komax likewise has to show flexibility. For this reason, Komax seeks to expand its global reach in a targeted way, be it through acquisitions – as described in the section entitled “Selective acquisitions” – or through the establishment of new sites (see pages 6 and 7). Komax's strong global presence is also reflected in the percentage breakdown of its revenues by region. The individual regions – Europe (including Africa), Asia/Pacific, and North/South America – each generated between 19% and 56% of Komax's revenues in 2019.

### Development of non-automotive markets

Komax now generates around 80% of its revenues through customers in the automotive industry. Market estimates indicate that some 60% of globally processed wiring is used in automotive manufacturing. This high proportion is explained by the fact that the automotive industry is peerless when it comes to standardization and automation. The high volume of wires needed for large-batch processing and the stringent requirements in place with regard to finish quality are key arguments in favor of automated solutions.

In addition to the automotive industry, there are countless other markets in which numerous wires are processed. Komax focuses predominantly on three additional market segments (see pages 12 and 13), all of which have synergy potential with the core business: aerospace, data communication and telecommunication (data/telecom), and industrial applications (industrial). As these offer attractive long-term growth opportunities, Komax is seeking to increase its penetration of these markets. If this is to be achieved, targeted investment in marketing and sales are essential. The success of this approach over many years is bearing fruit, as is evident from the fact that a first major order was received towards the end of 2017 from the aerospace industry, for example. Thanks to the large installations that Komax began supplying to the client in 2019, the automation of wire processing will be raised to a level that has never been seen before in the aerospace industry.

The megatrends evident in the automotive sector are influencing these three market segments in different ways. However, the potential for synergies with the existing core business in the automotive industry is considerable. The three other market segments are already addressing issues such as safety, lightweight construction, multimedia, small-batch production, and integrated production/Industry 4.0, and have been doing so for years. Moreover, Komax uses the experience gained in these areas in the development of automation solutions for the automotive industry. Conversely, the aerospace, data/telecom, and industrial market segments benefit from Komax's great expertise in the core business: in particular, Komax can adapt existing automotive solutions and, where necessary, specifically develop new products for particular segments.

R&D expenditure accounts for  
**8% – 9%**  
of revenues

## Selective acquisitions

The primary goal of the Komax Group is to grow organically. In addition, potential candidates and opportunities for acquisitions are carefully examined as part of a clearly defined acquisition strategy that revolves around its four key strategic priorities. Komax pursues this strategy as it intends to strengthen its leading market position, also making use of acquisitions and equity stakes.

The acquisitions made in recent years have played a significant role in the implementation of the strategic priorities. Examples of such acquisitions include the TSK Group (2012; solutions along the value chain), SLE quality engineering (2014; innovative production concepts), Thonauer Group (2016; increase in global reach), Laselec (2017; innovative production concepts and development of non-automotive markets), Artos Engineering (2019; increase in global reach and innovative production concepts), and Exmore (2019; innovative production concepts).

## Komax Group brands

The acquisitions of recent years mean that the Komax Group is present in the market with six further brands in addition to the Komax brand itself.

The Komax logo consists of the word "komax" in a lowercase, sans-serif font. The letters "k", "o", "m", and "a" are blue, while the letters "x" and "x" are red.

Komax manufactures innovative serial production machines as well as customer-specific systems for automated wire processing. These are used for the automation of various processes, such as cutting, stripping, labelling, crimping, and twisting, but they can also be used for the fully automatic production of entire wire harnesses. Komax's customers are active primarily in the automotive, aerospace, datacom/telecom, and industrial market segments.

When it was founded by Max Koch in 1975, Komax was just a three-man operation. But even in these very early days, the company was noted for its pioneering spirit. It launched the first cutting and stripping machine with a stepping motor drive after just one year, and would go on to develop the world's first microprocessor-controlled fully automatic crimping machine in 1982. Expansion abroad likewise started at an early stage – with the foundation of Komax USA in 1981.

Komax's headquarters and largest production site are located in Dierikon, Switzerland. Outside of Europe, Komax has production sites in Asia.

The Artos Engineering Company logo features the tagline "The first name in wire processing" in a small font above the word "ARTOS" in a large, bold, italicized sans-serif font. Below "ARTOS" is the text "ENGINEERING COMPANY" in a smaller, all-caps sans-serif font.

Artos Engineering, headquartered in Brookfield, Wisconsin, USA, is a leader in the automation of wire processing in North America. The company, which was founded in 1911, has a subsidiary in France and develops serial production machines for wire processing automation. In addition, Artos Engineering has considerable experience of optimizing its machines to accommodate innovative applications tailored to customers' specific needs.

Artos Engineering has been part of the Komax Group since April 2019 and primarily serves customers in the industrial applications, automotive, and aerospace market segments.

Founded in 1993, Exmore specializes in developing customer-specific solutions for automatic wire processing. In keeping with its motto “making industrial standards work,” Exmore develops sophisticated applications with which it optimizes serial production machines and thereby meets its customers’ specific requirements. In doing so, the company focuses on the development of applications relating to the processing of sensor cables. These cables are a key element in vehicles that drive on a highly automated or even autonomous basis.

Exmore has been part of the Komax Group since October 2019 and has its headquarters in Beerse, Belgium. The technology company predominantly supplies customers from the automotive, consumer electronics, industrial applications, aerospace, and medical technology market segments.



Kabatec is a global market leader in the field of taping technology systems. This leading technology company, which is headquartered in Burghaun, Germany, specializes in taping, bundling, and fixing of holding parts to wire harnesses. Founded in 2008 by Heinz Billing and Markus Reisinger, its core expertise involves the development and production of semi-automatic and fully automatic machines for processing adhesive and non-adhesive tapes. It mainly serves customers in the automotive supply industry, offering them both serial production machines and customized systems.

Kabatec has been part of the Komax Group since 2016. The two companies had enjoyed a strategic partnership for several years prior to that.



Headquartered in Toulouse, France, Laselec develops laser-based solutions for stripping and marking wires as well as intelligent assembly boards for wire harness manufacturing. These are used mainly in the aerospace industry. The company was founded in 2001 and has a subsidiary in the US.

Laselec is one of the leading companies in the world for the development and production of serial production machines and customized solutions for laser-based wire processing. The company meets all significant international quality standards in the aviation industry and counts renowned aircraft manufacturers among its customers.

Laselec has been part of the Komax Group since 2017. Komax acquired a 20% stake in Laselec back in 2015, and the two companies have been working successfully together on various projects since then. Thanks to this partnership, Laselec’s solutions have increasingly found their way into the automotive industry.



Thonauer was founded in 1988 by Friedrich Thonauer in Austria, and is headquartered in Vienna. In addition to Austria, Thonauer is also represented in Romania, the Czech Republic, Hungary, and Slovakia. The main focus of its activities is the sale of machines for wire processing, particularly for the automotive, electric systems, and electronics industries.

The Thonauer Group has been part of the Komax Group since 2016. Prior to this acquisition, the two companies had been working together very successfully as partners for decades. Thonauer has been Komax’s representative in seven countries in Central and Eastern Europe right from the start.



TSK develops and sells test systems and adaptation units for testing wire harnesses and further electrical-electronic assemblies and components. TSK products are used predominantly in the automotive supplier industry and wherever the functionality of complex assemblies needs to be tested in order to recognize errors within the manufacturing process at an early stage.

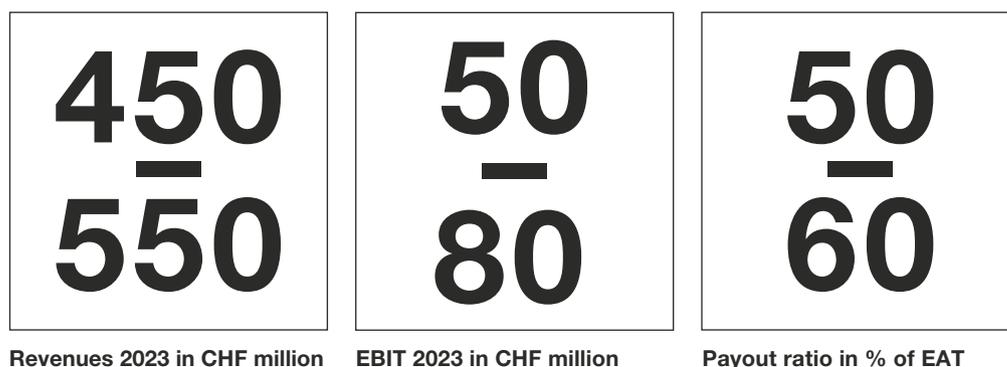
TSK has decades of experience in quality assurance in wire assembly. The company was founded in 1983 by Helmut Kahl as Test Systeme Kahl, or TSK for short, and has its headquarters in Porta Westfalica, Germany. The TSK Group manufactures in Europe, North and South America, Africa, and Asia. It has been part of the Komax Group since 2012.



## Mid-term targets

The Komax Group is distinguished by its robust equity base and strong profitability. This solid foundation enables Komax to systematically pursue opportunities to develop the company further. As an additional benefit, it offers security in challenging times.

For the current strategy period, Komax has set itself ambitious targets for growth and profitability. Given IHS Markit's current assessment of developments in the automotive market over the next few years, the Board of Directors has decided to adapt the mid-term targets (2017–2021) and define a new time horizon – 2023. Up to 2023 the following targets are in place:



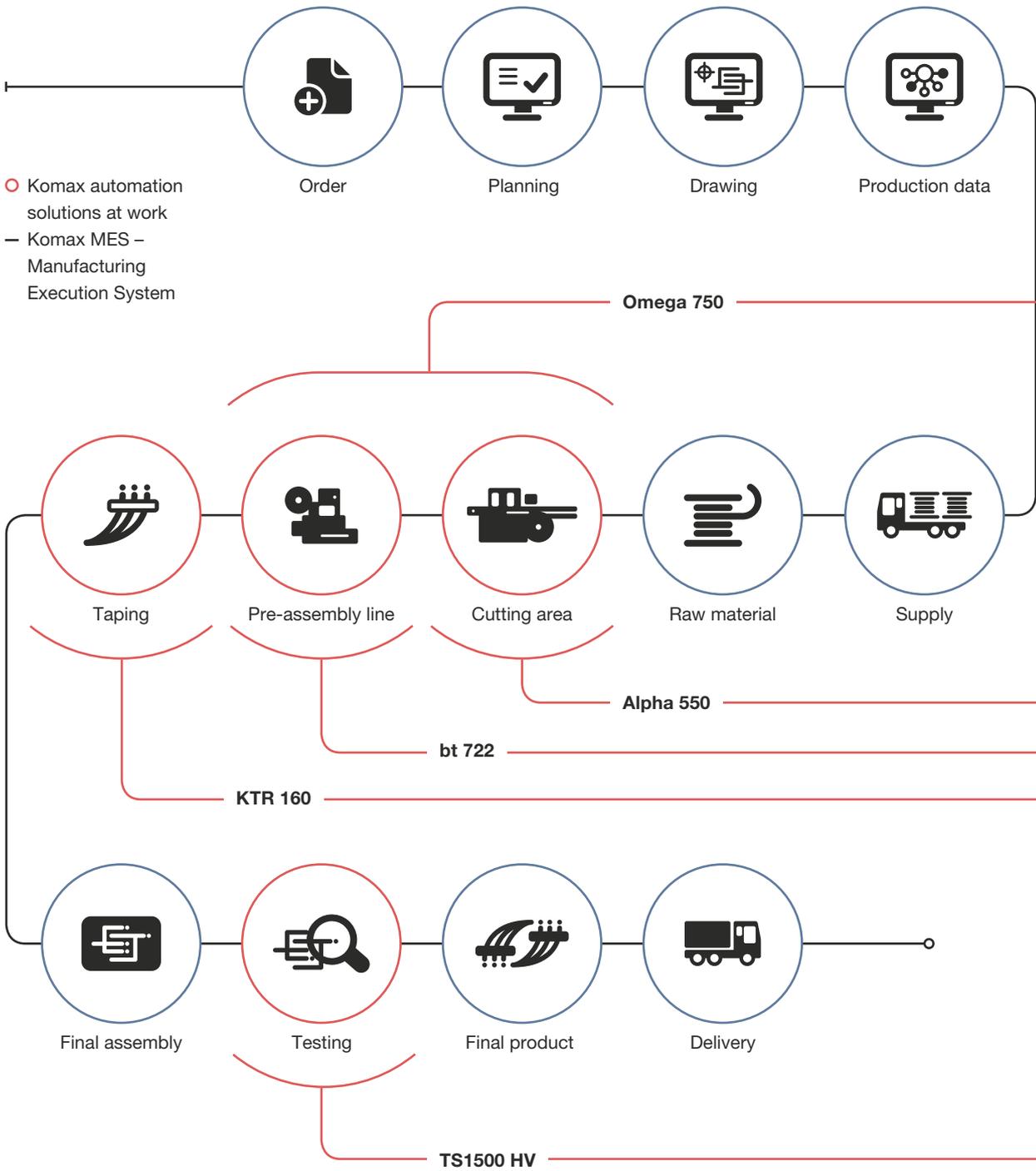
The targeted revenues figure of CHF 450–550 million by 2023 is to be achieved mainly through organic growth. Komax is expecting two factors to contribute to annual market growth of 3%–5% from 2021 onwards: the annual increase in the number of vehicles produced globally (CAGR: 1%–2%) and the steady rise in the degree of automation in wire processing (CAGR: 2%–3%). Komax is expecting to generate annual organic revenue growth at least in line with the growth of the market.

Komax has the broadest portfolio of solutions, and benefits from its global presence in growth phases. Rising revenue figures and an advantageous product mix enable Komax to deliver disproportionately high increases in profitability. It is seeking to achieve EBIT of CHF 50–80 million by 2023.

Thanks to a business strategy that is geared to long-term success, Komax creates sustainable value that benefits investors too. Komax remains committed to its payout ratio and has thus set itself the goal of distributing 50%–60% of Group profit after taxes (EAT) to its shareholders every year until 2023.

	2019	2018
Revenues (in CHF million)	<b>417.8</b>	479.7
EBIT (in CHF million)	<b>24.0</b>	67.3
Payout ratio (in % of EAT)	<b>52.3</b>	52.0

# SOLUTIONS ALONG THE VALUE CHAIN



The majority of Komax customers are wire harness manufacturers whose business consists of processing the individual wires – predominantly by hand – into wire harnesses and delivering these to vehicle manufacturers (OEMs). Komax offers its customers a wide range of solutions and systems for the automated and efficient processing of wires and for the taping and testing of wire harnesses. These are used in the cutting room, at the pre-assembly stage, and when taping and testing. In addition, Komax supports its customers along the entire value chain – from planning through to delivery – with the Komax MES. This software automates the planning, controlling, monitoring, and analysis of all resources and production processes. This has the effect of optimally deploying machines, materials, and employees, so that wire harnesses can be completed to deadline, as well as to the requisite quality.



#### **Cutting, stripping, crimping, block loading**

With the Omega 750, the cutting, stripping, crimping, and loading of terminals is undertaken with just one machine. The end product is a wire harness fitted with contact housings on both sides, produced in a fully automated way.



#### **Cutting, stripping, crimping**

Fully automatic crimping (crimp to crimp) and twisting machines can be found in the cutting room. For the double-sided crimping and fitting of seals, Komax customers use the fully automated Alpha 550 crimping machine, which can twist and tinplate the braids, among other things.



#### **Semi-automatic crimping**

In order to be able to process individual lines at the pre-assembly stage, customers use a machine like the bt 722 benchtop crimping press. The programmable crimp height, integrated crimp force analysis, and bad-crimp cutter ensure a final product of top quality.



#### **Taping**

In order to reduce sources of noise and prevent electromagnetic disruptions, wire harnesses are taped, as with the KTR 160 from Kabatec. The act of bundling wires or attaching clips to wire harnesses is likewise covered by this section of the value chain.



#### **Testing**

Before Komax customers deliver the completed wire harnesses to the OEM, they subject every single wire harness to a connection test (electrical test). For this they resort to the test systems of TSK, such as the TS1500 HV for high-voltage cables.