

# Engineering in the 1990s

## Martin Jepkens on '90s-Era Tech and More

By Dr. Thomas Scherer (Germany)

Martin Jepkens became hooked on electronics shortly after receiving a Kemo kit at the age of eight. By the age of 16, he was an *Elektor* subscriber. He recently shared his thoughts about some of the 1990s-era projects and technologies that he found interesting and inspiring.

Martin Jepkens is the managing director of ME Engineering in Marl, a medium-sized engineering company that has specialized in industrial automation since 1991. At the beginning of the 1990s, Jepkens was still in school, but he already had lots of experience with a soldering iron. Here he talks about the technical challenges and upheavals of the 1990s that have shaped him.

**Scherer:** Together with your business partner Dirk Korthals, you have been managing director of ME Engineering [1] for 11 years. It must have been an exciting journey. What are you up to today?

**Martin Jepkens:** We are a service provider for the industry and offer almost everything, from engineering solutions and consulting to services in the field of EMSR and automation technology. The acronym EMSR refers to Electrical, Measurement, Control (*Steuerung* in German) and Regulation technology.

**Scherer:** What services does your company offer to businesses that use or plan to use automated processes and industrial automation?



Martin Jepkens (Source: Nicole Vauth-Pawlak)

**Martin Jepkens:** We have a lot of experience and can advise our customers, plan hardware and software to produce tailor-made automated solutions, and help with commissioning or optimization (e.g., of manufacturing processes or larger technical systems). This can typically range from steel or chemical processing plants to modern production facilities for manufacturing products. We are also specialists in the areas of functional safety and explosion hazard protection.

**Scherer:** In 1990, you were still at school. How did you first come into contact with electronics?

**Martin Jepkens:** I remember I got a Fischer electronics kit when I was around eight years old. I was also given one of those Kemo kits, which by the way are still available today (almost unchanged). From then on, I was hooked and became a real geek, not only with electronics, but also mechanics, inspired by my father's bicycle workshop. Soon I started to work out my own electronic circuits.

**Scherer:** It's fascinating you were into electronics so early in your life and then went on later to study computer science and physics in the 2000s. What were you doing "technically" in between those times?

**Martin Jepkens:** My earliest memories are making things with my hands. I loved building model boats and aircraft including helicopters — their control system always used electronics. I was also into music with my friends. I built various amplifiers and lighting systems myself. I developed the thyristor output stages of a lighting controller and wrote the code to control it from a PC. I also had an interest in building unusual clocks back then. For example, at that time I converted an old station clock and installed a controller which was synchronized using DCF77 time signals.



*I'm a real '90s kid ... I was fascinated by the fact that you could do more with PCs than just run off the shelf programs.*

Martin Jepkens

**Scherer:** You must have been a teenager in the 1990s. Which aspects of technical progress made a particular impression on you at the time?

**Martin Jepkens:** I'm a really typical example of the PC generation. My first computer was a C64, followed by an Apple IIe, and then a 286 PC. Since then, I always like to keep up with the latest generation of computers. I'm a real '90s kid. I very quickly got into working with the various PC interfaces. I was fascinated by the fact that you could do more with PCs than just run off the shelf programs.

**Scherer:** Do you still remember your first microcontroller? Which one was it and what were your experiences?

**Martin Jepkens:** As far as I can remember, it was the 68HC11 from Motorola. At the time, I was impressed how it allowed me to build a standalone controller which ran independently of a PC. I was able to introduce real dynamics into electronic control circuits for the first time. My earlier projects built using standard logic ICs were good at performing a defined function, but with a microcontroller I could introduce more complex control behavior and "intelligence" into the system. That left a deep impression on me at the time!

**Scherer:** What were your favorite projects from the 1990s?

**Martin Jepkens:** I've already mentioned a few projects. I have been a subscriber to *Elektor* from the age of 16 and also built some of the projects published in it. With my background in model making, I have always been interested in battery charging technology. Back in the day, I built intelligent chargers for the batteries used in my models. In my father's bike shop, I also repaired the control electronics on the first electric bikes, such as the Hercules Electra. It was often the case that the motor control output stage had blown and I was able to repair it and save the customer and my father the cost of a new assembly. And as you can see (**Figure 1**), I still enjoy electrically powered vehicles today. I'm now driving my second Tesla. ◀

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Figure 1: Martin Jepkens's electric car at the charging station he built himself in front of the ME Engineering company building in Marl (Source: Dr. Thomas Scherer).

## WEB LINKS

[1] ME Engineering: <http://www.me-marl.de>