

## How Emerging Technologies and AI are Transforming the Lives of Electricians

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In the classic film *The Matrix*, Morpheus famously offers Neo a choice between a red pill and a blue pill—the chance to either wake up to the reality of the future or remain in blissful ignorance. Electricians today face a similar crossroads, as the rapid advancement of technology, particularly artificial intelligence (AI), presents both challenges and opportunities. Will you embrace the "red pill" of technological innovation, transforming your work and business? Or will you stick to traditional methods, potentially missing out on the efficiencies and growth digital tools offer?

### The Digital Revolution in the Electrical Trade

For decades, the role of an electrician has been grounded in hands-on expertise, problem-solving, and a deep understanding of electrical systems. However, there is a new reality, and electricians are not exempt; digital tools are revolutionising the industry and learning how to navigate this change is very important. The shift from manual processes to digital solutions is streamlining various aspects of the job, from managing paperwork to improving customer interactions.

However, it's not just software companies leading the charge to digitisation; the government is as well. A great example of this is how we pay our taxes. Recent government initiatives, such as Making Tax Digital (MTD), have further accelerated the adoption of digital technologies. While it may seem a pain, these measures are designed to simplify compliance, reduce paperwork, and ensure that businesses operate as efficiently as possible. For electricians, this digital shift represents both a challenge and an opportunity. The challenge lies in adapting to new technologies, while the opportunity lies in leveraging these tools to improve productivity and grow their businesses.

### The Impact of AI on Electrical Work

2024 is the year Artificial Intelligence went mainstream. You can't turn on the TV without being told that AI is either going to kill us or turn life into some sort of utopian paradise. These are extreme examples. We should think of AI as more of a useful tool rather than a weapon that's going to take over the world or our jobs, at least for now. These AI tools are everywhere, and electricians can easily access them to predict problems, optimise workflows, and even communicate with customers.

### Predictive Maintenance and Diagnostics (PdM Software).

AI's ability to analyse data and predict outcomes is particularly valuable in predictive maintenance. Sensors are now so cheap, and everything can be connected to the internet for a tiny amount of money. Imagine having a tool that can warn you of potential failures in an electrical system before they happen. This capability allows electricians to perform maintenance proactively, reducing client downtime and preventing costly repairs. Predictive diagnostics also enable electricians to pinpoint issues more accurately, saving time and improving service quality. Companies like Fiix are an excellent example of this; they have software that can connect to installed devices and report and alert before a problem occurs.

### Automated Job Management.

Automated job management tools are becoming increasingly popular among electricians. These tools can automate scheduling, quoting, invoicing, and customer and staff communications. For example, AI can optimise schedules based on job urgency, location, and available resources, ensuring that electricians can complete more jobs in less time. Automation also reduces the administrative burden, allowing electricians to focus on the technical aspects of their work rather than getting bogged down in paperwork. My company, Powered Now, is one of the most popular in the UK doing this, but there are others, such as SimPro and Commusoft. The back office used to do job management, but that's no good if you are a one-man band; you are the back office! So think of these tools as an extra team member and offload the heavy lifting.

### Energy Management

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We recently exhibited at the brilliant Installer Show in Birmingham. Over 30k visitors were made up of Electricians, Renewable Installers, and Heating and Ventilation Engineers. It was a hectic three days on the Powered Now stand, but I managed a few hours to wander around, and I was amazed at how intelligent some of the hardware was becoming. A good example, on one of the stands, was a whole demonstration of how AI is used in energy management.

We used to call these smart buildings, but the truth is that the controls, sensors, and connected software on the market now are a level above simply being smart. AI tools can analyse an entire building's energy usage patterns and suggest optimisations to reduce consumption and costs. For example, AI can learn when certain areas of a building are most frequently occupied and adjust lighting and HVAC systems accordingly, or it can recommend the installation of energy-efficient components based on real-time data.

For electricians, this means providing installation and repair services and offering clients smart energy solutions that can lead to significant savings and environmental benefits. AI tools can help electricians offer value-added services, like detailed energy audits, which are becoming increasingly important as sustainability needs grow.

## **Productivity in the Age of Automation**

In 2016, Mark Farmer authored an influential report titled "Modernise or Die." The report, which was commissioned by the UK government and published in October 2016, offers a comprehensive analysis of the UK trade industry and its significant productivity challenges.

The report outlines several pressing issues facing the trade industry, including labour shortages, low productivity, and a lack of innovation. It emphasises that the industry is at a critical juncture where failure to modernise could lead to severe consequences, hence the report's subtitle, "Modernise or Die."

While AI and automation are key drivers of change, productivity remains the central theme in the technological evolution of the electrical trade. For electricians, increasing productivity is more than just doing more work; it's about working smarter, not harder.

## **Streamlining Workflows**

Digital tools and AI can significantly streamline workflows, reducing the time spent on repetitive tasks. For instance, job management software I mentioned above can automatically populate forms with customer and job details, eliminating the need for manual data entry. By automating routine tasks, electricians can free up time to focus on more complex and rewarding aspects of their work. Mobile Technology for On-the-Go Efficiency

In the field, mobile technology is a game-changer. Electricians can now access job details, update work progress, and communicate with clients directly from their smartphones or tablets. This saves time and ensures that all information is up-to-date and accessible from anywhere. Mobile apps tailored for electricians can also capture essential data on-site, such as photos or signatures, further streamlining the process. However, if I have learnt anything in this space, it is to be prepared for a lack of signal. The UK mobile network really is terrible, so it also needs to work offline!

## **Data-Driven Decision Making**

Integrating AI and digital tools also enables electricians to make data-driven decisions. Electricians can identify trends, optimise pricing, and improve service delivery by analysing data from past jobs. For example, tracking job profitability can help electricians understand the most lucrative jobs, allowing them to focus on areas that will drive business growth.

## **The Human Element: Balancing Technology with Craftsmanship**

While technology offers numerous benefits, it's important to remember that the essence of the electrical trade lies in craftsmanship and expertise. AI and automation are tools that enhance, rather than replace, the skills of a professional electrician. The key to success in this new era is balancing technological adoption with the traditional values of the trade.

As technology continues to evolve, we must commit to continuous learning. Staying updated on the latest tools, techniques, and regulations is essential for maintaining a competitive edge. Training programs,

online courses, and industry certifications can help us keep pace with technological advancements and ensure we can effectively leverage new tools.

Despite the rise of digital communication tools, maintaining personal connections with customers remains crucial. While AI can handle many aspects of customer interaction, the human touch is still irreplaceable when building trust and understanding your customer needs. Combining efficient digital communication with a personal touch is vital.

## **Preparing for the Future**

The future of the electrical trade is undoubtedly digital, with AI and automation playing leading roles. However, the successful electrician of tomorrow will be one who can skilfully integrate these technologies into their daily work while maintaining the craftsmanship and personal service that define the trade.

Tools like Powered Now, FiiX, and others I mentioned are just part of the broader digital ecosystem available to electricians today. The focus should be on how these tools, along with others, can enhance productivity, improve customer satisfaction, and ensure compliance with evolving regulations. By embracing technology while staying true to the core values of the trade, electricians can look forward to a future that is more efficient and rewarding.

However, while you may prefer Morpheus's blue pill and stay where you are, the world is moving fast. In this rapidly changing environment, the most successful electricians will be adaptable, tech-savvy, and customer-focused. By leveraging the power of AI, digital tools, and automation, electricians can transform how they work, delivering better results for their customers and greater satisfaction in their careers.

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