Getting close to end customers – fleet management for tools

1 April 2019 | **Internet of Things** | **Gerald Brose**
Reading time: 6 minutes

For larger machines, connectivity and machine-to-machine communication have been established for a long time – from construction machinery with predictive maintenance to autonomous agricultural machinery. But increasingly, professional tools are being made smart using IoT solutions. This gives manufacturers direct access to the end customer, where up to now, distribution has been organised via intermediaries, and the ability to reinforce their own brand or their own USP compared to retailers' own brands. The potential benefits are enormous – for all the parties involved.

Connected power tools – the networking of professional tools and the resulting data represent a promising solution for manufacturers and end customers. On the one hand, they offer the prospect of higher productivity, less maintenance and thus less downtime, e.g. through predictive maintenance. On the other hand, new scalable value creation models are possible that can be efficiently implemented with a focus on the respective target personas and their needs.

The **end users** of the devices get answers to important questions such as: Where are my devices? How long can I use a device for before it has to be serviced? Which devices or components should I replace in the near future? Who is my nearest service partner? What replacement or wear parts do I need? When might I contravene health and safety guidelines, such as Directive 2002/44/EC for protecting tool operators from vasospastic syndrome caused by vibration?

For **manufacturers** of the power tools, the following advantages are possible:

- The R&D department can find out, e.g. from the resulting usage data from the product life cycle, whether the tools are designed correctly. For example, whether the next generation of a component should have different dimensions or whether the devices work as planned under real-world usage conditions.
- Quality assurance can deduce trends that indicate potential problems from the data.
- The sales department can design more demand-oriented usage-based pricing models, for example by using geolocation and integration with a CRM system for specialist retailers and end customers.
- Marketing receives important information, such as the markets for which the right equipment

is available and where there are still gaps. End customers can be targeted as part of marketing campaigns, for example, for special promotions.

- The servicing department can optimise and organise the stocking of spare parts or consumables.
The manufacturer's **service and distribution partners** can address existing customers directly in a targeted way and inform them of any upcoming maintenance or special offers, and can order consumables in good time from the manufacturer and supply them to the end customer.

Promising applications

There are already some interesting and promising applications in the field of connected power tools, two of which we have selected as examples:

- STIHL is currently testing a new digital offering providing access to digital fleet management. Networking provides an overview of the devices deployed, their maintenance status and their availability. This allows optimal coordination of the equipment fleet and work assignments.
- Using software and an app from HILTI, devices and tools can be easily managed. Resource management saves costs through optimised device utilisation and offers further advantages, such as an overview of maintenance dates and tool tracking.
The main target group for connected power tools is professional end users. In the B2B sector, there are many interesting application options, such as fleet management or deployment planning based on geolocation or remaining run times. If the solution services are integrated with the company's other IT systems, e.g. inventory, resource planning or billing systems, it very quickly results in added value for all the parties involved (customers, retailers, manufacturer).

Need for comprehensive expertise

From a technical point of view, different technology areas are merged together in networked tools: the company's own on-site IT, the device electronics with their embedded software and the cloud platforms. In principle, power tools can be made smart within a short period of time with a manageable amount of development work. In most cases, all that is needed is a combination of sensors, a low-power wide-area wireless module and often a smartphone with the appropriate app.

Retro-fitted or line-fitted sensors allow more devices to be upgraded and networked in relatively little time. After processing, the data obtained from the tools can be visualised, e.g. in the cloud, via a web application or on a smartphone app. It can give the different personas valuable insights into an individual device or provide different perspectives on a whole fleet of tools.

However, medium-sized manufacturers in particular find it difficult to carry out the necessary digitisation with little to no IT background. Ultimately they need to build up the necessary expertise in areas such as hardware, software, data analysis, security and business model innovation. To master this successfully requires integrated interdisciplinary engineering to create a functioning overall system.

Not all beginnings are difficult

So how can medium-sized manufacturers make the leap into the area of connected power tools? The answer here, as with many areas in the field of digitisation, lies in a lightweight introduction with subsequent scaling and industrialisation. To start with, there must be a vision that combines technological feasibility with a functioning business model and genuine needs on the customer side.

Sound business innovation consulting not only helps to develop an integrated end-to-end view so the right architecture is adopted from the start, making it easier to carry out scaling and industrialisation later on. It also helps to anchor a common vision and thus to secure the support of all stakeholders for the planned IoT solution.

With this support and the right architecture, a project can be launched on networked devices on a small scale to gain initial experiences with a realistic proof-of-concept. This basic system can then be further scaled according to the vision. The end result is a networked machine portfolio and a reliable IoT system designed to meet the specific requirements that provide a range of benefits for manufacturers, distributors and end customers.

Learn more about connected power tools on the HMI.

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