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Open manufacturing: sharing tools, sharing know-how

In most production environments, designs are protected, machines are locked behind safety doors, and product development happens in isolation. But a growing movement is rethinking this approach – and it's gaining ground across Europe.

Open manufacturing brings together people, tools, and ideas in a more transparent, collaborative way. It's not just about sharing blueprints, it's about lowering the barriers to innovation, testing ideas earlier, and building products that are more adaptable, repairable, and sustainable.

The idea isn't new. In fact, the roots of open manufacturing go back to community-driven workshops and the early days of FabLabs. What is new, however, is the way this approach is now influencing real companies – especially SMEs and startups looking for lean, flexible pathways to market.

What “open” really means

Open manufacturing is often misunderstood. It doesn't mean giving everything away for free. It's about **sharing just enough** to accelerate development, **inviting feedback** from peers or users, and using **modular, documented tools** that others can replicate or improve.

In practice, that might mean:

- publishing a hardware design under a permissive license
- building with standard, off-the-shelf components
- using shared prototyping labs to test quickly
- collaborating with external developers or makerspaces
- designing for disassembly and repair

The result? Products that are easier to maintain, adapt, and scale – without long waits or vendor lock-in.

Why it works

Let's say you're a small company working on a new modular air filtration unit. Instead of developing everything from scratch, you adapt an existing open-source enclosure, build your electronics around commonly available components, and test your setup in a local FabLab before investing in tooling. You publish your control software with basic documentation, and soon other teams are contributing patches or adapting your code for different use cases.

You're not just saving time. You're learning faster, reducing costs, and building trust through transparency.

This model aligns very well with the goals of **green transformation**. It reduces waste, promotes reuse, and encourages local, small-scale production – especially relevant for companies navigating tight budgets or fragmented supply chains.

How open manufacturing can support small innovators

For small manufacturers and solution providers, open manufacturing offers a practical alternative to traditional product development. With limited access to capital or in-house R&D, sharing tools and ideas – even partially – can speed up experimentation and reduce risk.

The ability to prototype in shared labs, use off-the-shelf components, or build on existing designs is particularly valuable for early-stage innovators working on green and digital solutions. It allows them to move faster without committing to expensive infrastructure, and to collaborate beyond their immediate ecosystem.

While not all companies are ready to embrace openness fully, even small steps like publishing documentation or testing in open environments can make a measurable difference.

Where to go from here

Open manufacturing isn't a silver bullet and it's not for every product or company. But for those willing to rethink how innovation happens, it opens doors: to faster testing, better products, and more resilient ecosystems.

Whether you're working on modular robotics, low-impact sensors, or even repairable home appliances, you don't have to start from zero. There's a growing network of platforms, labs, and partners willing to build with you, not just for you.

If that sounds like your kind of future, stay connected. The Greene 4.0 project continues to support founders and innovators who see **sharing not as a risk, but as a resource**.

Sources:

<https://fabfoundation.org>

<https://oshwa.org/resources/open-source-hardware-definition/>