In Virginia, TechShop lets 'makers' tinker, innovate

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It's hard to miss the plane that sits triumphantly in the midst of a store in Washington's suburbs. But there are no wings, cockpit or motor attached to its shiny fuselage.

And the man tinkering with it is neither a professional technician nor an occasional handyman.

Rather, he and others around him are "makers"—enthusiasts from a myriad of backgrounds keen on coming up with new things through collaboration.

Welcome to TechShop—a chain of eight facilities in the United States where creatives, in exchange for a fee, can access professional equipment, software and experts.

At first glance, the Arlington branch, located at a mall just several Metro stops from the White House, looks like a small, nearly empty and nondescript store.

But once inside, there's no mistaking this is a space where ideas come to life. Spread across nearly 2,350 square feet (220 square meters), it is stocked full of equipment.

A faint smell of burnt wood wafts through the air, emanating from a laser cutting machine.

With the help of this 3D printer, inventors can create shapes in a whole range of materials, from cardboard to wood and foam.

'Makerspaces' see boom

These types of machines are now standard in so-called makerspaces, participatory shops open to the public that have seen a boom of sorts in recent years.

It is unclear when exactly this do-it-yourself (DIY) maker culture or movement first began, with its push for "learning through doing" and taking novel approaches to the use of both traditional and new technologies.

But humans have been collaborating on making tools and coming up with new methods of using them for millennia.

The latest iteration of the maker movement—which has made its mark on more than 500 open sites throughout the world over the past decade—kicked off with two specific events.

First, there was the opening of the first hackerspace, c-base, in Berlin in 1995.

This meeting place for hackers eventually helped provide real-world applications bridging the gap between fiddling and technological hijacking, by allowing these programmers to weld machinery.

The second spark took place at the Massachusetts Institute of Technology, when MIT professor Neil Gershenfeld launched a class in 1998 to teach his students how to use machine tools.

Instead of attracting techies, "How to make (almost) anything" saw

architects, artists and designers join forces to try to learn how they can create what is not commercially available.

Innovation unites diverse crowd

That's exactly the crowd at the TechShop in Arlington—people from diverse backgrounds but united in their desire to create something new and innovative.

On a recent visit, Arsenio Menendez, an 18-year-old engineering student, was working on a 3D print of a replica of an assault rifle from the Halo military science fiction shooter videogame.

Taking that first step to create something can be challenging for the uninitiated.

"It's hard to make people understand it's not hard!" Menendez told AFP.

Nearby, 52-year-old veteran and TechShop instructor Steve studied the handle of a machete he has made.

Each of the eight US shops in the chain are sponsored by local businesses or agencies operating in the region where they're located.

Here, in the shadow of the Pentagon, it's the US Defense Department's DARPA military research agency, which played a key role in creating the Internet, and the US Department of Veterans Affairs that are doling out the cash.

Veterans get a free annual membership that allows them to participate in training workshops and use TechShop machines.

Next to the laser cutter, Steve Colthorp, a 32-year-old game designer,

was busy building 3D wooden puzzles.

The board game creator learned about TechShop through the website instructables.com, a treasure trove of tutorials and how-to instructions well-known to makers that now has a global audience.

Back at MIT, Gershenfeld built on the success of his machine tool class by launching the first fab lab, or fabrication laboratory, in 2001.

These community workshops, following rather strict guidelines, allow participants to carry out their projects, from simple everyday hacks to pre-commercial prototypes.

A fab lab is open to the public, has several basic machines available (3D printers are recommended but not required) and participates in a global network of labs by sharing manufacturing plans and techniques.

But the term is a victim of its own success, and now is used to describe a wide variety of workshops in Europe that don't always follow the MIT guidelines.

In one extreme example, MyDesign at Carrefour supermarkets in France is a simple stand where users can get photographs and logos printed on products. That's quite a few steps removed from the DIY spirit.

Among the different types of fab labs available, TechShop is among the most commercial.

A subscription costs $150 per month, or $1,650 per year.

And while the machines, services and training provided may justify the cost, it's more commercial than other participatory workshops elsewhere that tend to be free, or almost free apart from the cost of materials.

Regardless, these public workshops to reappropriate manmade objects are taking flight— the number of makerspaces around the world doubles about every 18 months.

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