

UN urges more investment in cutting-edge technologies to drive growth

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Japan, the United States but also increasingly China, are among the few nations driving global innovations like 3D-printing, the UN said Wednesday, urging more investments in fields expected to carry future economic growth.

In a report on the importance of vanguard innovation on [economic growth](#), the World Intellectual Property Organization said nearly all [patents](#) within the cutting-edge areas of 3D printing, robotics and nanotechnology were held by a handful of countries.

"We need to reinforce the environments that give rise to the breakthrough technologies of tomorrow," said WIPO director Francis Gurry.

The UN agency pointed out that in the past, game-changing inventions like airplanes, antibiotics and semiconductors created booming industries and became "the root of long-lasting expansions in economic output".

In the same way, 3D printing for instance, with its ability to "print" anything from guns to cars, prosthetics and works of art, is predicted to transform our lives in coming decades as dramatically as the Internet did before it.

The same goes for robotics, used in a wide range of fields, for instance replacing humans in dangerous environments or manufacturing processes, or to create prosthetics, and nanotechnology—the creation of

systems and objects on atomic and molecular scale.

But the WIPO report found that only six countries, Japan, the United States, Germany, France, Britain and South Korea have since 1995 filed more than 75 percent of all patents in the three areas.

China meanwhile appears to be catching up. When counting just since 2005, the country has been responsible for more than a quarter of patents worldwide in the areas of 3D printing and robotics, and almost 15 percent of nanotechnology filings.

In contrast to the longer established innovating countries, Chinese patents in these areas are filed mainly by universities and public research organisations, WIPO said.

While there is not always a direct link between where an invention is patented and where a technology will develop and flourish, "initial conditions matter", WIPO's chief economist Carsten Fink told reporters.

Gurry meanwhile hinted more countries could likely benefit from diving into cutting-edge innovation, pointing to the well-known links "between technological progress ... or innovation and economic growth".

Japanese companies are leading in the area of robotics, the report found, pointing out that eight out of 10 patent applications in the field came from firms like Toyota, Honda, Nissan, and Sony.

US companies meanwhile collectively top the list of nanotechnology patents, even though Samsung is single-handedly the top patent filer in the field.

US entities also file for most 3D printing patents, with 3D Systems and Stratasys topping the list, and with General Electric and United

Technologies among the top 10.

Three German companies—Siemens, MTU Aero Engines and EOS—along with three Japanese companies—Mitsubishi, Hitachi and Toshiba also figure among the top 3D printing patent filers.

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