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Development in Brief

The rise of artificial intelligence: what does it mean for developing countries and emerging economies?

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Artificial intelligence (AI) refers to computer programs (algorithms) which can automatically perceive, identify connections, make decisions and learn in the process.

Use of AI has become significantly more widespread in recent years due to increased use of digital technologies, access to richer data sets and growing computing power. AI is used to analyse and structure data and produce forecasts. It is becoming increasingly significant in development cooperation (DC) as well, especially in traffic planning and management, healthcare, disaster prevention and management and the provision of public services.

What types of AI are there?

AI is a broad term which can be divided into several subcategories according to how the algorithm learns from the data. These include machine learning (ML), for example, which describes an algorithm that can learn independently. ML is mostly used to identify structures and connections in large data sets. The richer the data set, the better the result. In contrast, standard algorithms can only perform a function if they have been programmed to do so. This means that they are limited to predictable results. For example, an algorithm can be programmed such that emails from a particular sender are always placed in the spam folder in an inbox. ML, on the other hand, involves the use of algorithms to analyse data, learn from them and make a decision or a prediction as a result. To continue the example above, in this case an ML algorithm would compare the email against other emails that the user has put into the spam folder. The algorithm uses this to decide whether the email is spam or a standard message.

Use cases in development cooperation

There are already several AI-based applications in development cooperation. For example, AI is being deployed in Togo to monitor the regular floods of the Mono River using a self-learning algorithm, and generate forecasts.

The first banks are using ML to predict the probability of potential borrowers defaulting. By the end of 2017, this had made it possible to issue personal loans to 21 million Kenyans who previously had no access to credit. However, like every technology, use of AI involves both opportunities and risks.

Opportunities and risks

Using AI in developing countries and emerging economies can lead to new products and business models, leapfrogging solutions and improved access to credit. The automation of business processes can reduce production costs. Services in these countries can be designed more efficiently and incentivise innovation. AI can also significantly improve education in schools because learning content can be individually tailored. For example, a smart textbook installed on a tablet can tailor individual tasks to the user's progress and thus structure learning more effectively.

However, there is also a risk that developing countries and emerging economies will become dependent upon companies or nations which are leaders in the AI sector. Other general risks include the fact that the technology can exacerbate inequality, discrimination and human rights violations.

For example, an algorithm can be used to check whether someone is creditworthy. However, if the algorithm has been trained on data which discriminate against a minority when issuing credit, the algorithm will incorporate this discrimination. Furthermore, the automation of processes in the economy can lead to changes in work requirements and disruption to traditional work.

Tasks performed by employees with fewer qualifications are replaced by software solutions. This will impact the transport sector, for example, with the introduction of self-driving vehicles. Data protection, security and public confidence in institutions must also be guaranteed in order to keep driving the sustainable development of AI solutions.

Outlook

To enable developing countries and emerging economies to benefit from artificial intelligence as well, we must ensure that they do not become dependent upon individual companies or countries. It is therefore crucial that these countries build their own skills and provide suitable infrastructure. It is also important for governments to facilitate access to large amounts of data, while achieving network effects by establishing standards for the use of data and algorithms.■