

ON ARTIFICIAL INTELLIGENCE

The biggest potential benefit of Artificial Intelligence (or simply **AI**) is in the healthcare industry, especially in developing countries. Why? Because this is one of the very few areas where **AI** can drastically reduce (rather than raise) costs, increase “happy productivity” (if you don’t know what happy productivity is, read our report on **What Creates Wealth**) and rapidly improve the overall quality of healthcare services. Below we will explain why we believe the biggest potential benefit of **AI** is in healthcare.

AI represents the *third* era of machine intelligence. In the *first* era, machines could just count things (e.g. calculators). In the *second* era, machines became programmable (from TVs and washing machines to cars and airplanes). We are now entering the *third* era, when machines learn from the past (by analysing lots of data), apply that analysis to the present and try to predict the future, just like humans do.

However, machines are unbiased and don’t have prejudices. Human brains have cognitive biases, that is to say, prefer short-cuts, approximations and generalisations. Human brains always search for rules of thumb because it is easier and less tiring.

Moreover, human brains are incapable of quickly, correctly and optimally processing all the data/information available (hence often lead to errors and biases). There is a lot of research proving that normally bright people can often make incredibly irrational decisions.

So Why in Healthcare more than Anywhere Else?

Let us start with an example. Many doctors around the world, especially in developing countries, are incapable of correctly interpreting blood test results, for various reasons – bad education, laziness, time pressure, lack of reliable laboratories and so on. Because of this, they often encourage their patients to undergo all sorts of scans (CT Scans, MRI Scans...) and treatments which are not really necessary.

There is also the universal problem of corruption, especially in developing countries. Clinics invest in various medical equipment and then force their doctors to generate patient flow, to make sure they make back their investments. In many developed countries, ethical norms and standards now prevent doctors from prescribing unnecessary treatments and procedures, but in most developing countries these ethical standards are ignored.

Moreover, doctors often make costly mistakes. Two different doctors can prescribe conflicting medications to the same patient, with very damaging side effects. Even in developed countries such as Canada studies have indicated that doctors often misdiagnose patients, confuse depression symptoms with hypertension (high blood pressure) symptoms, and prescribe drugs against hypertension to patients suffering from various depression syndromes. The result is that patients return for medical treatments, often with major side effects, and this overburdens the entire medical system, especially in countries with universal healthcare.

A relatively simple AI software could easily solve several problems:

- » Interpret anyone's blood test results, quickly compare with previous results, highlight problems and recommend treatments which most doctors, especially in developing countries, would often miss.
- » Highlight all drugs that are mutually exclusive and can not be prescribed or taken together.
- » Based on patients' family history, highlight those who are more or less predisposed to certain diseases such as cancer and thereby recommend which patients should undergo more frequent cancer diagnostics.
- » Solve several corruption problems, especially in developing economies.
- » And so on and so forth...



Conclusion

Integrating AI solutions into healthcare would rapidly and significantly increase the productivity of the healthcare system. The same number of medical personnel could easily treat twice as many patients without working more hours. This is what we called “happy productivity” in one of our previous reports.

Installing these AI solutions will cost very little. For many developing countries, the overall cost of healthcare could even fall, despite rising quality and productivity. With ageing populations and rising healthcare costs, effective AI systems are the only solution for most governments.

We will further discuss this topic during our Futures Studio Discussions sessions, with various guests who are interested in this topic.

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