

Matching IoT with ethics

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The Internet of Things (IoT) is about a synergy between devices and people. It aids lives, businesses and education by leveraging the network of communication, which is done by the Internet.

At the very basic, the understanding of IoT involves deriving information as it lets users collect a wealth of data from the Internet. As for its application, the emergence of IoT has passed its infancy stage, as the profound social impact is a testament of its benefits. In the examples below, certain trends, figures and the application of IoT have proved its increasing significance in society.

Last year, the time that people spent on using apps globally hit 1.6 trillion hours. That figure will be staggering in future as the connection of devices with the Internet is inevitable.

Affirming this point, app analytics company (Flurry) found that the average time spent per day on mobile devices is two hours 38 minutes. The most significant revelation was that 80 per cent of mobile device users spent their time in apps, while the remaining 20 per cent in website browsing.

In the healthcare sector, the recent news on Malaysia's first Artificial Intelligence (AI) stethoscope (Stethee) is absolutely cutting edge. Datuk Dr Noor Hisham Abdullah, the health director-general, said he device allows users to listen to heart and lung with detailed analysis.

Amplified with the geotagging system, Stethee provides insight into problem areas and locations, and environmental data for healthcare professionals to do analysis. Moreover, this sophisticated device will empower remote and rural healthcare with precise detection of heart and lung diseases.

In education, the disruptive technology enhances and replaces existing methods of research in higher-learning institutions. Technology bodes well with social scientists — in sociology, anthropology, and psychology — as they are intrigued by big data.

As a result, the power of big data has transformed the way social scientists distill raw data, i.e. information that has not been processed for use.

Then, data collection used to be interviews, focusing on group discussions to get insights from research participants.

Now, social scientists deal with equally large amounts of data from mixed sources (unstructured texts from social media, pictures, emails, news feeds and text colours). For the analysis of the big data today, the process of deriving high-quality

information with “text mining software” helps researchers to understand colour, texture and text.

The text mining analytics tool helps researchers to discover patterns, themes and concepts, with an emphasis on statistical approaches. This unique rise of big data and IoT technologies (cloud computing, data analytics, natural language processing, text and data mining) are useful to improve research quality. Furthermore, it encourages a digital research culture.

No doubt, the enthusiasm in IoT, which today’s society has embraced, is a living testimony of its widespread success. But, the euphoria should not outpace ethics as it holds a prominent place in this brave new world.

With ethics, the question that follows is how to bring out the best in IoT.

Social scientists and healthcare professionals can obviously embrace big data to make their research and analysis more reliable, credible and scalable. But, they also have to think about privacy — what is private and what is not.

For example, the geotagging system allows professionals to track specific locations from a device, but, when it comes to privacy, some data has to be encrypted and a person’s privacy should be maintained.

Although the use of educational apps and other smart forms of technology will enhance the learning experience, the concern is that it will only become an amazing experience for students if they are accelerating new ideas, solutions and issues.

Chief executive officer Satya Nadella of Microsoft said: “We don’t celebrate technology for technology’s sake; we celebrate how others harness the power of technology to go out and change the world.”

For teachers, their role is to facilitate students to benefit from e-learning resources, assist the process of doing assignments, and explain the ethics regarding tasks completion (for instance, citing resources to avoid plagiarism).

In addition, teachers must also empower students by taking them on field visits, so they can learn hands on. It is the practice that makes ethics prevail.

The brave new world is merely at the tip of the iceberg. As there will be many changes and more autonomous systems, the unmatched benefits of IoT should be consistent with ethics. With ethics at its core, the world will be a better place, as technological breakthroughs will bring enormous benefits to society.

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