

# Intellectual Tech Envisioned

## Column – Seeing Tomorrow

**NTT DATA's yearly report on the impact of technology helps organizations navigate a fast-changing digital world**

NTT DATA's annual digital impact report, NTT DATA Technology Foresight 2017, comes from one of the worlds' top IT service innovators and providers. The goal of the report is to identify global challenges politically, socially and economically whilst finding solutions through new technologies in today's fast changing markets. Investing \$1.8 billion in research and development annually, NTT Group has identified artificial intelligence (AI) as becoming one of the central technologies that NTT DATA will monitor and invest. According to technology research firm Tractica <sup>(i)</sup>, the AI market will grow from \$643.7 million in 2016 to \$36.8 billion by 2025.

The report highlights how AI is making quantum leaps in conversational computing, robotics and precision life science. New innovations have positioned AI as part of the DNA for forward-looking societies.



### Changing Traffic Pattern in China

Chinese cities have been becoming ever-growing population centers over the last couple of decades, and a burgeoning middle-class has paved way for traffic gridlock. However, big data analytics looks to revolutionize things, with Guiyang, the capital of Guizhou province in Southwest China bucking the trend as traffic has been reduced by as much as 51 percent through

calculating the optimal parameters to keep traffic moving more efficiently. Putting this data into action, NTT DATA, partnering with the Institute of Software, Chinese Academy of Sciences (ISCAS), captured and monitored data from traffic cameras for more than 1 million vehicles on the road in the city. The company now does simulations and analysis to control traffic in real time. This provides a knock-on effect for the city that sees commuters become more productive as they spend less time stuck on the road, which could result in longer-term economic gain.

### AI in Healthcare

AI is increasingly becoming an essential tool in healthcare. Medical professionals can now leverage huge amounts of data, giving more personalized care than ever.

Today, NTT DATA is placing interactive robotic assistants in the homes of the elderly and elder care facilities. The company's humanoid robot is named "Sota." At 11 inches tall he bears a slight resemblance to computer-animated science fiction character, Astro Boy.

In addition to interacting with his users, Sota can count how many pills the patient has taken and report back to the physician. At his core, Sota is an IoT device. He is connected to the internet and the data is kept in the cloud. The data captured from Sota provides physicians with the patient's real-time data, helping to detect problems before they become fatal. Within healthcare, AI can monitor for patterns from the data given by patients and begin to give physicians predictive scenarios in order to enhance personal care.

Research shows even conversations such as what a person did the night before can prevent dementia symptoms. And, by being connected with other devices, if an elderly person collapses, it is immediately detected by Sota and a nurse or ambulance can be called.

Another area that AI is revolutionizing healthcare is in the Intensive Care Unit. The smart ICU can calculate if patients will lapse into a grave condition within two hours.

This prediction system constantly monitors vital sensor data of the patient using big data to predict symptoms and issue necessary alerts. NTT DATA is currently testing its smart ICU at the Virgen del Rocio University Hospital in Seville, Spain. Clinical findings show that early medical intervention can lead to effective recoveries for ICU patients suffering from serious life-threatening illnesses or external injuries. Also, the system is extremely useful to train young doctors.



### Technology Partnerships

The ways in which technologies are being developed are changing. NTT DATA has a platform in which a technology is developed and improved with its partners through repeated studying and testing phases to 'spiral up' development. It provides risk scores and other diagnostic information, along with the "Proof of Concept" and "Agile" methodology, which is cloud and mobile ready.

NTT DATA Technology Foresight 2017 can give companies and edge by showing insight into how new technologies can contribute in many areas of human life and society to innovate more.

(i) Artificial Intelligence Market Forecasts, August 2016, Tractica