The digital instrumentation and global interconnection of our planet are generating a treasure trove of information. This data can help us tackle broad, systemic problems and inefficiencies that have vexed the world for decades. It also raises new challenges. By one estimate, the volume of created content will quintuple in the next two years—to more than 2.5 zettabytes. At the same time, according to the FBI, cybercrime is now more widespread than narcotics, and its techniques are evolving, its targeting becoming more focused. Further, the digital and physical infrastructures of our world are increasingly merging, infusing our power grids, banking systems, retail supply chains and city streets with intelligence. Are we now exposing them to the same risks as our Web sites?

Thankfully, the answer is no. The emerging “secure by design” model is based on how people, processes and technology come together in a unified system. It embeds protective measures and features at key points, and uses high-speed data analytics to help uncover threats before attackers launch them.

Dallas-based electricity distributor Oncor has deployed a smart meter network that is also a more secure meter network. It provides integrity to energy data, creates Web-based trust with consumers—and has saved nearly $250 million.

At New Zealand’s Westpac bank, fraud detection tools use a combination of rules and predictive analytics to help identify constantly changing credit card fraud patterns.

And as healthcare becomes a growing target of threats, some in the industry are adopting two-factor authentication for physical and digital assets in order to enable hundreds of authorised people—and only authorised people—to access patient information.

Across multiple industries and sectors of society, security is a key component of our planet’s vital systems. Which means that, as these systems get smarter, we all have the collective responsibility to also make them secure and reliable.

Let’s build a smarter planet. Join us and see what others are doing at ibm.com/smarterplanet/uk