

> Smart Data revolution: WA poised to save billions and boost productivity

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Last year 4.4 zettabytes of data was stored – enough to fill 37.8 billion 128GB iPads – enough iPads to reach the moon if stacked one on top of the other

Data is able to be captured from almost any industrial application – with ‘internet of things’;

The next productivity breakthrough is coming via Smart Data (conversion of big data to meaningful information)

There is a global race to develop smart data applications which calculate everything from optimal wind-turbine settings, forecasts of a country’s natural gas consumption, and treatments for cardiac arrhythmia

Western Australia’s mining, oil and gas, energy, water, healthcare, transportation and other industries stand to greatly increase their productivity by harnessing the immense power of big data and turning it into smart data according to visiting global expert.

The state could save billions of dollars by adopting smart data tools, says one of the world’s leading experts in the field, Siemens’ Dr Florian Beil – a physicist and computer scientist – who is visiting Australia for the first time.

“A decade ago, it would have taken 1,000 years to produce 5 billion gigabytes of data. Today, the same volume is generated in less than 10 minutes. This phenomenon we call big data,” Dr Beil says.

German-based Dr Beil, who conducted his PhD in the area and has been working in the field for 10 years, says the volume of data in society is now doubling every two years. Vast volumes of data are generated in the planning, production, operation, and monitoring of all sorts of industrial devices.

“The real challenge is turning the bits and bytes into meaningful information to enhance productivity. That’s where smart data tools come in.”

Essentially we’re talking about incredibly powerful mathematics and clever programming using complex algorithms to help human beings overcome challenges that range from managing scarce resources to demographic and climate change.

The USA, the UK, Europe and China are all in a race to turn big data into smart data, while Dr Beil says “Australia is on the cusp of an explosion in this area and WA could benefit the most.”

According to Dr Beil, as the WA economy and industries shift from the build and construct phase to the operational phase, smart data offers tremendous opportunities for cost savings.

“Just think about it from the perspective of predictive maintenance. We can now use data to forecast how a machine will behave.

“In the mining and oil and gas industries, hardware is often spread over huge distances. Data is streaming in and being captured all over the state or the country.

“We can see if a piece of equipment is likely to break down and plan for it, rather than face unnecessary disruption. Downtime is minimized and so is unnecessary maintenance,” Dr Beil says.

“In the water sector, smart data can be used, for instance, to readily control and monitor the purity of outflow from reservoirs to the point of distribution, before it gets to customers. Contamination and leakage can be easily detected.

In medicine, smart data stands to improve patient care and outcomes. Algorithms can connect information from imaging devices (such as an MRI) to doctors’ findings and derive the most appropriate treatment recommendations.

Dr Beil says “we stand on the precipice of a brave new world, with smart data being an immensely powerful tool, set to improve the way society – in all its forms – operates.

“Literally, over the lifecycle of a project, there are billions of dollars of efficiency opportunities in Australia,” Dr Beil says. Unexpected downtime in mine site can cost hundreds of thousands of dollars per hour and have been known to wipe out millions of dollars in the share price.

“Companies that find the best solutions using smart data will win the race, so there is a real urgency in this field.”

Dr Beil is in Australia for a week, visiting clients and industry representatives, talking with them about the practical benefits of smart data.

Example: Energy Analytics at Siemens Amberg electronic Factory

Smart Data tools come in many forms and Siemens’ own plants are also benefiting.

By using energy analytics in our Amberg electronics plant in the last 12 months we’ve been able to save 100,000 litres of liquid nitrogen and reduce energy consumption by ~200,000 kWh compared to the previous year (ie 5%).

Media Contacts

Communications Manager

Keith Ritchie

p: +61 3 9721 7230

m: +61 457 841 189

keith.ritchie@siemens.com

Media Relations

Ms. Krupa Uthappa

p: +61 3 9721 7681

m: +61 427 601 578

krupa.uthappa@siemens.com

All other inquiries

p: 137 222

customercare.au@siemens.com
