



5 minutes with... Ian Gardner

Ian is Distinguished Technical Specialist, and Industry 4.0 Solutions Architect at IBM. He regularly speaks about Industry 4, and how you can gain efficiencies from the latest manufacturing technology and data solutions at selected leading events, including Advanced Engineering. Keep an eye out for IBM at Advanced Engineering this November, where cybersecurity will be their key topic in our Connected Manufacturing forum.

How long have you been in the industry?

I've always been a big fan of technology, innovation and invention. Back in the day, BBC's Tomorrow's World was a firm favourite and I got my first computer in 1978. Computers were very different back then. IBM was very visible with the first PC. Early computers had very limited processing power, memory and storage. When programming, discipline was needed to squeeze every bit of potential from a machine. I remember connecting my computer to Lego machines that I'd built and the satisfaction this gave me – translating physical actions into digital responses or vice-versa. I see this again now with the digitalisation of legacy machines in manufacturing. That discipline is still needed in embedded systems where there is limited power and a need for efficiency.

A buzz for me has always been with how to solve problems, embrace new technologies and do things differently. Thankfully, life in IBM gives me the opportunity to do this daily.

It's hard to believe but IBM was founded in 1911 -that's old for a tech company! It has constantly evolved and moved with the times. They are still the world's largest private research organisation and has been the patent leader for the past quarter of a century with many notable inventions that have changed lives. [IBM's 5 in 5](#) shows IBM's predictions for 5 things that will change our lives in the next 5 years.

How would you describe your typical day?

I'm fortunate to have a role that has plenty of variety and daily challenges. I do have routines though – I'm a big fan of the BBC Radio 5's Wake up to Money which starts just after 5am. I find it gives me a good view of what's happening in the world.

IBM's marketing describes us as problem solvers, and I think that's a good description. Much of my time is spent addressing problems, defining solutions and looking at how things can be done differently. I'm fortunate to see lots of interesting

clients which opens my eyes to the challenges being faced by companies and how they are being addressed.

I am an IBM academic ambassador, I work closely with several universities, being part of their advisory boards, I lecture, mentor students and am a charity IT advisor. These things give me great satisfaction.

Outside of IBM I have an 8-year-old son who I love to spend time with, playing football together and taking him to his many sports activities.

What, if anything keeps you up at night?

I have quite a large lawn which when left uncut, proves to be a huge amount of work to sort out. I find that those rare dry days which are ideal for cutting the grass seem to occur when I'm on the road or working.

But that's all changed now since I invested in a robot lawnmower which patiently cuts the grass 24/7 rain or shine without complaint. Now I can redirect my time and energy to more rewarding activities.

On a serious note, this illustrates how technology can change the way that we work and use our time for better things. Much like the digitalisation of manufacturing, my robot mower is smart and has high levels of utilisation. It is a connected machine that has GPS, lots of sensors, and talks to me when it needs help. It is optimised to use weather data to predict the growth rate of the grass and will change its activity levels to accommodate different growing conditions. This is very similar the paradigm we aspire to with Industry 4.0. My productivity has increased, I've been upskilled to do more interesting things and my grass looks better than ever. Happy days!

What do you think will be the biggest difference 10 years from now?

A lot can change with technology in ten years. In engineering and manufacturing I believe we will continue to see more and more digitalisation and integration of the 'front office' or shop floor. More and more data will be generated and exploited. Augmented intelligence will expand to assist and help engineers in what they do.

I'm not a futurist but I believe that systems will become more autonomous, embedded and disparate. Challenges will emerge in how to manage and administer these, but I foresee a rise in open standards, protocols and plug-and-play integration. High value production data will feed back into the design process which, ultimately could be self-improving. Focus will intensify on the circular economy with more accountability in this area.

I remain positive for the future and the opportunities this presents. Much like what my robot lawnmower has done for me, tasks will disappear or change. But I'd like to think that this will open new opportunities in creativity and working conditions.