**Robotics**

**What is Robotics?**

The word robot comes from the Czech word ‘robota’ which means forced work or labour, today this word is not looked at in the same way and we use it to describe any man made automated machine that we make. Robotics today is the study of robots and is a division of engineering which includes different engineering disciplines such as mechanical engineering, electronic engineering, computer science and information engineering, these disciplines come together to create machines(robots). Robotic Machines can be programmed to work in a fully automated operation or a manually controlled one.

Robotics depending on what sort of industry you relate it to can vary quite a lot, it can have different applications and abilities depending on the industry in which it is used and for what type of job. Take for instance companies like Toyota, Holden, Ford and other car companies who use robots for manufacturing of cars. These robots generally operate automatically although they have a trigger to start, they then follow their program and rarely make a mistake and will only need adjustments after many hours and parts ware out. These robots do this day in day out in a fast and efficient manner and take away issues with heavy lifting and strenuous repetition and even weld. Newscorp Australia use robots to stack pallets of papers which helps minimise twisting and strenuous back movements and is helping prevent injury. Or for that manner the SWAT in America who use manually controller robots for dangerous work which is saving the lives of their team and minimising their risk. Even NASA has robots like the mars rover that are exploring planets and sending back information and testing surfaces, something that years ago would have been just dreams. And they are also being used in the medical industry to dispense or mix medications.

Robots have in fact been around for a long time, the first commercial robot was built back in somewhere between 1954 and 1956 by a man by the name George Devol, he named this robot the Unimate. Although primitive in today's standards it was ahead of its time and was used to automate hot metal die casting.

Today robotics have in fact come along way and as advances in areas like machine learning, natural Language processing and Autonomous vehicles improve so do the abilities of robotics. Robots like the humanoid robot Atlas can now run like a human, and jump up and down from heights. Boston Dynamics have robots that can open the door and walk outside, although not always that smooth. Boston Dynamics also have a robot that can pick up items that are of a heavy weight and can keep its balance, and even if it falls it can get itself back up. Companies such as suitx are using these advancements to create exoskeletons that help people with disabilities walk. Then there is the AI robot named AlphaZero who learned chess in 4 hours, learned from itself and then went on to beat chess master.

Robotics into the future will no doubt include facial recognition so they can recognise with whom they are taking too, Robots with this feature will help make conversation a more personal experience and help robotics become more natural in a home environment, bionic limbs advancements will improve for disabilities and will help people who have lost a limbs and will be a great help for soldiers who have returned from and had been injured in war. There will also be companion robots which will be great for anyone who is lonely and in need of a friend and who will be able to assist the elderly and will probably be able to cook and help children with their study.

**What is the Likely Impact?**

The potential impact through advancements and development in robotics will no doubt have both a very positive and also very negative impacts and then some in between. For someone who may not be as skilled as others and who are working in a labour intensive jobs, they could possibly loose their jobs to the automation processes and to the introduction of more advanced robotics, although this has already been happening for many years and has been seen in car companies, and logistics. If advancements in medical robotics continues doctors and nurses could also be at risk and their numbers will reduce, currently there are medical robots that are being design for operations. Even in a military context robotics will change the way wars are fought and won. This would reduce the number of military human soldiers needed on the battle field, would reduce the costs and would also help save human life from loss and injuries. Robotics can also have great advantages such as exoskeletons, companionship and more accurate medical operating procedures. What is likely to change will be the way that industry and manufacturing need to go about their processes, with the advancements in robotics, manufacturing and other industries will have to change these the way they do things, the way that they go about their processes and they will need to re-evaluated, redesigned and rebuilt them to suit robotics in the workforce. This technology will shift areas of employment and education, and labour intensive jobs will become obsolete as robots will take more of these roles and this will help reduce injuries. Jobs in technology will continue to increase and will be on the rise and employment in this area and education and training around it will also be on the rise. Teachers with the required skill set will be in hi demand as well as robotic engineers.

**How will this effect me?**

As Robotics evolve over time and the more they become part of our daily lives, robotics will have both positive and negative impacts on my life, I work in, and have spent a lot of my working life around manufacturing, I have worked as an electrician in a labour intensive job, and also as a supervisor in a management role. Robotics involvement and integration will no doubt lead to changes in my working life, they will reduce the number of employee’s that I have to work with, they will possibly increase the need for re-training of employees and management staff, and will demand that I improve my education and skills around the robotic technology field. Robotics will also demand more IT integration, and will demand great change in the way my employer integrates robotic technology into their workplace. Robotics will change the way they think, and the way they build manufacturing plants in the future. My job role will become more of a trainer role, rather than a supervisor, and i see with the reliability of robotics, permanent technical employees will not be in such demand. It will be easier to have contracted staff or a contracted maintenance company to service and repair any faults in the robotics.

In my personal life I find robotics fascinating, In a way it is like watching my childhood imagination and fantasies become true. I love technology and I love the change. I look forward to robotics in the home, I look forward to when it can help with things around the house like cleaning, cooking and helping teach and talk to me and others. I know my family would feel different as a lot of my relatives work in labour intensive jobs, and do not want to retrain. So there will be many family and friends who will not be able to get a job, they will be unemployable and unskilled for robotics in the future.