

Welcome to the summer edition of the Loop Technologies quarterly newsletter.

Here at Loop, we are constantly working on and completing innovative new projects, the scope of which is almost endless. We would like to share what we have been working on lately to give you an indication of the wide range of work we undertake and further insight into our capabilities.

In this newsletter we showcase:

- The conception of Cognetex: An origin story – discover how our newly launched Cognetex platform came to fruition.
- A staff profile on Devon Theunisz, Electronics Production Assistant with our Business Enterprise Team.

Also in this newsletter:

- Christmas and New Year operating hours
- Review us on Google

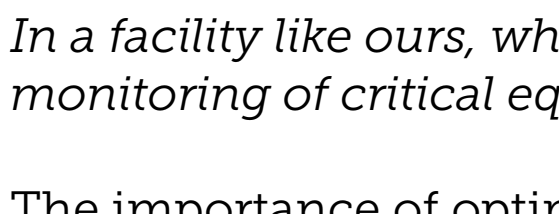
We hope you enjoy this edition, and we'd love to hear from you if there is anything further you would like to know.

Roger, Ross and the team at Loop

THE CONCEPTION OF COGNETEX: An Origin Story



Better management, decision making and financial outcomes



Glenn McCarthy
Business Manager, IT and Digital Transformation.

At the start of 2013, the Internet of Things (IoT) concept was just beginning to emerge into mainstream thinking.

Google was about to purchase Nest, the smart home automation company and buzz was growing throughout the electronics market of the possibilities of how different devices could automate and collect data to improve people's homes and workplaces.

In Hamilton, New Zealand, Loop Technologies were beginning to ask themselves questions about how they might improve their workplace. Glenn McCarthy was Business Manager – Technical Solutions at the time and he reflects;

"We looked at our workplace, our lab area particularly, and asked ourselves; what can we measure and what do we need to have in place to collect data? In a facility like ours, where we deal with electronics every day, temperature monitoring of critical equipment was the obvious place to start."

The importance of optimum temperature in a facility such as Loop Technologies cannot be overstated.

"We operate a lot of expensive equipment on a 24/7 basis, and if we have a cooling system failure, the temperature rise can be significant causing processors to overheat and severely shorten the life of the electronics. Some of the gear we operate is legacy equipment that is no longer available, so temperature is critical," says Glenn.

Another important aspect that needed better monitoring, was the humidity of the work environment.

"We have a special coating on the floor of the lab to dissipate away static charge, and our team wear static protective coats and heel grounds to ensure that no unseen static electricity can damage the equipment we are working with. If the relative humidity is not above 30% these don't work," says Glenn.

Humidity within the facility is measured using a hygrometer. The hygrometer measures water vapour in the air and displays it as relative humidity. A relative humidity of 30% or greater is required to ensure the team can safely work with the electronics. If the humidity falls below that level it is necessary to take additional static protection precautions. Walking past and checking the hygrometer was the only way to check the humidity levels.

Temperature and humidity are both critical aspects of Loop's business, so Glenn began to investigate possible solutions using IoT. He soon found temperature and humidity sensors could be brought together with a wireless embedded computer module to collect data and send it to the cloud. What he and his team then devised were the ways and means to store and display the data that could enable accurate and timely decisions to be made. The Loop team built computer software interfaces and a mobile app that enables the constant monitoring of the temperature and humidity levels within the facility.

The Loop team, now have 24/7 peace of mind that their critical equipment is not overheating and they no longer need to check the hygrometer every day. The system has alarms built into it so if there is a high temperature or drop in humidity, the system will alert the team instantly.

This enables the team to address any issues that may arise quickly.



Loop Technologies humidity monitor pre COGNETEX



The modern facility monitor mobile app enabled by COGNETEX

Looking around the business, Glenn next zeroed in on the facility's critical DC power supply. For many years, Loop has been the preferred supplier to several of the larger telecommunications companies for component level repair. The test beds used in the repair process require power supplies that stay within precise limits.

The team got to work developing the necessary technology to monitor the power supply and ensure it is always within the correct range.

"The IoT solution turned out to be incredibly useful and we soon found ourselves asking; where else could we apply this thinking and technology in our business?"

IoT ENABLES REAL-TIME SPARES MANAGEMENT PORTAL MONITORING

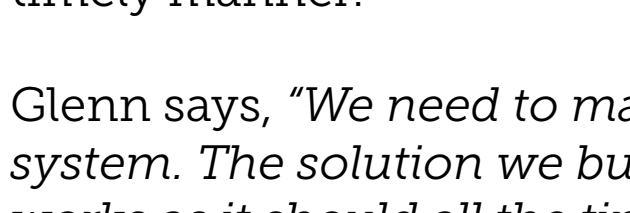
Loop Technologies operates a web portal which allows its customers to make spares requests online. It is necessary that this portal is always operational.

Glenn and the team implemented a clever method to continuously check that the system is working. They created a dummy request, which repeats every 10 minutes, and is monitored by the cloud based system like a heartbeat. If the request is not received, alert emails and smartphone notifications are triggered immediately, meaning the issue can be fixed in a timely manner.

Glenn says, *"We need to maintain the integrity of our online ordering system. The solution we built enables us to have confidence that the system works as it should all the time. And, should a problem arise, we know that we are alerted to the issue immediately, rather than waiting for customer feedback."*

And for the Loop Technologies management team the peace of mind from knowing the system works to measure, monitor and control the environment within the Loop Technologies Lab and offices has been important.

"We now have certainty that we will be alerted should issues arise across the various environments and systems within the business. We do not need to worry about the humidity, the temperature or if the online spares ordering system is operational."



The Spares Management Portal which is now monitored in real-time via a COGNETEX platform

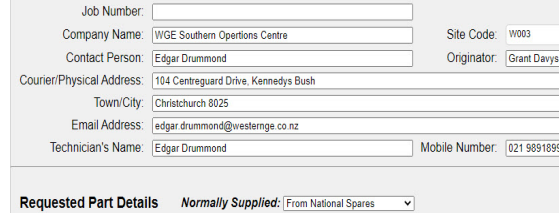
With the technology successfully installed in their own lab, the Loop team began to look for other applications of the technology they had developed.

Roger Hurst, Director of Loop Technologies says, *"With the knowledge and confidence we developed with our in-house IoT solution, we realised that we could implement this platform in a wide range of business settings. Our recent customers, the Vickers Aircraft factory in Hamilton, and Tauranga City Council, demonstrated the diversity of use cases for the system we had developed, and the COGNETEX platform was born."*

And according to Glenn, *"The COGNETEX platform is the chassis. We then add the extras to the chassis to get the system to measure whatever it is that needs to be measured."*

Loop's Design Engineers design and manufacture the interface hardware to connect the sensors to the platform. From there our software developers build the apps and reports, extending the abilities of the IoT.

All-in-all the COGNETEX platform is a way for companies to benefit from IoT and the decision-making power it enables. Limited only by their imagination, at Loop and COGNETEX are excited by the possibilities and projects they are working on.



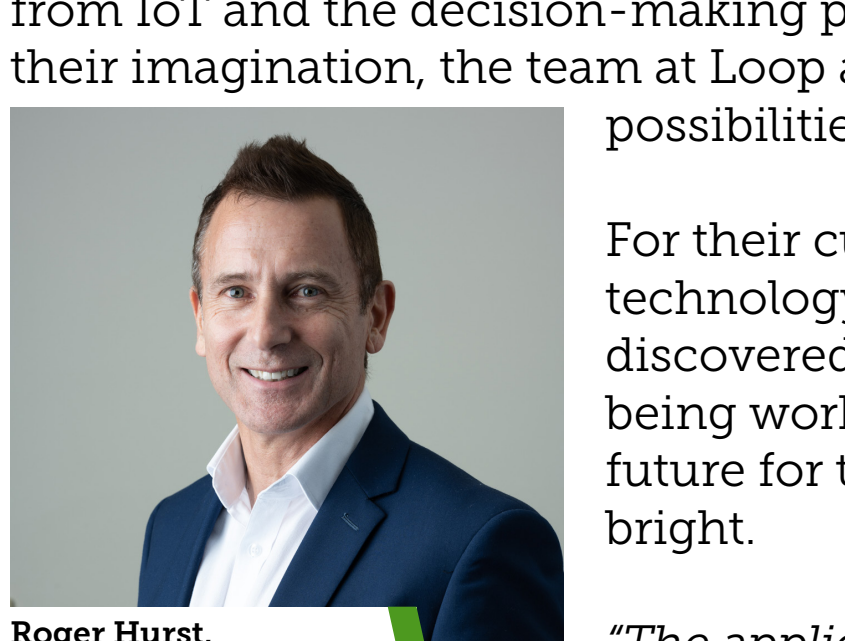
Roger Hurst,
Director,
Loop Technologies

For their customers, the applications for the technology are only just beginning to be discovered, but judging by the projects currently being worked on by the COGNETEX team, the future for the application of the technology is bright.

"The applications for the platform are endless. We can take any environment or machinery, develop ways to measure the critical data points with sensors and report that data in a way that is immediately useful to the user. The decision-making power is immense." – Roger Hurst, Director Loop Technologies.

Meet the Loop team

An insight into the life and role of Devon Theunisz, Electronics Production Assistant.



Devon Theunisz
of
Loop Technologies.

The staff at Loop Technologies are truly instrumental to the business, not just for day-to-day operations but for the ongoing success of the company. We would like to continue introducing you to the team helping to create behind the scenes magic, next up is Devon Theunisz, Electronics Production Assistant. We recently sat down and asked Devon the hard questions.

What was your career background before joining Loop?

I completed high school at a Killcreek High and then worked as a Kitchen Hand for around six months before a role repairing scanners came up in the Enterprise Team at Loop Technologies. I worked in that role for around six months before I started working in other areas.

What made you want to get into the technology/engineering industry?

I've always had a keen interest in electronics/electrical stuff. In 2014 I entered a Waikato Science Fair and was awarded 1st place in Innovations and Technical Innovations. I designed and made a kinetic phone charger, a portable mobile phone charger that would charge itself while a person was walking around. That's actually when I first heard about Loop Technologies who sponsored the prize that I won – I still have a trophy sitting on my shelf with their name on it! When I saw the role at Loop come up I jumped at the chance and applied – I've been here 3 years now.

What does your role at Loop involve?

I predominately work on the repair and testing of handheld barcode scanners which are used by couriers, supermarkets and airports and I also work on small printers and devices for supermarkets.

Another part of my role is to assist with the repair of Motorola radios – we are sent broken items and receive a fault report (usually) and then from there I repair/test and bring back to operation before sending back to the customer.

What's your favourite part of your job?

It's an engaging job where every day is a bit different, I love looking at a problem and figuring out the best way to attack it – there's a lot of thinking outside the box required.

The staff at Loop are knowledgeable, supportive and will freely share their ideas and advice, there is expertise in abundance which means I can learn things really quickly.

Loop is the only business in New Zealand that offers the type of technical solutions for extending product lifecycle and I enjoy being a part of that.

What are the values that drive you?

Curiosity – I love learning about how things work and constantly strive to learn as much as I can, I was always pulling things apart as a child/teenager to see how everything fit together.

Motivation – I enjoy deliberately challenging myself every day and always improving on previous efforts.

Teamwork – Being part of a team and working seamlessly is the key to both a happy work life and the successful execution of any job.

What would you say about working at Loop Technologies?

People greet you and are happy for a chat, they teach you how to do a task and are supportive and friendly – I really like that.

I appreciate that Loop is consciously environmentally friendly – they have lots of green initiatives and even the work that we do means that equipment which would usually be thrown away gets a second life.

There is also good scope for progression within the company if you're willing to learn, already I have had exposure to many different projects and parts of the business. If you're interested in a particular part of the business Loop are happy for you to jump on a project and learn more.

What do you like to do outside of work?

Outside of work I am big on anything vehicles, I have a couple of motorbikes and cars and can always be found working on those. I love buying vehicles that need a bit of work and then fixing them up and selling them.

I have recently taught myself how to play the ukulele so have been having a bit of fun with that. I also enjoy getting out into nature, in particular bushwalks of which my favourite would be the Karangahake Gorge, and all the tracks off there.

Loop Technologies Christmas / New Year hours

To finish off a busy 2022 the Loop Technologies team will be enjoying some well-deserved time with family and friends and our office will be closed between these dates:

CLOSING: Friday 23th December

RE-OPENING: Wednesday 4th January

Loop Technologies would like to wish you a safe and happy festive season!

Review us on



ARE YOU ONE OF OUR HAPPY LOOP TECHNOLOGIES CUSTOMERS?

We would love for you to review us on Google and share your experience with others