# Step out of the Loop

Optimise your Drive Thru

With drive-thru sales rocketing from 65–70% to 90–95%* of a typical QSR sales – as a result of the pandemic – it's no surprise that the time customers transition from order point to order collection has become an even more important Key Performance Indicator (KPI), making measurement accuracy critical.

Pre Covid 2019   Dec 2020

■ DRIVE THRU   ■ DINE IN
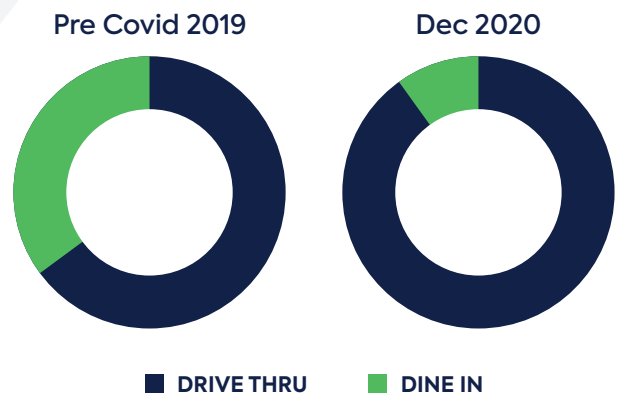
At Fingermark™ we believe that even if volume and speed of traffic inside your drive-thru can be captured with 100% accuracy, this information only scratches the surface.

We discuss the limitations of legacy loop detection technologies and how they limit your business' potential to drive operational efficiency, maintain customer satisfaction, empower your team and grow your revenue.

Understanding the limitations of legacy systems enables us to truly appreciate the benefits of Eyecue™ – the customer journey system from Fingermark™ – which delivers highly accurate real time data and powerful actionable insights.

Induction Loop Detectors (ILD) only 70% accurate

✓ Patented in 1937 by Joseph Poliakoff as a method of improving people's hearing

✓ Early 1960s technology scaled for larger applications

✓ For decades ILDs were used by road traffic controllers to gain understanding of volume and speed of traffic

✓ IDLs went digital in 1980s but are still only 70% accurate

Is your drive thru limited by the confines of the loop?

Inductive Loop Detectors (ILDs) look appealing from an initial investment perspective but they present significant operational limitations and maintenance costs compared to the costs and flexibility of above ground solutions, with their easily replaced and cost effective components. ILDs are a less attractive long term solution when you consider the total costs; the direct costs associated with ILDs (and the lack of flexibility if you change layout, park bay location or decide to upgrade to a dual lane drive-thru), plus the indirect costs incurred by less accurate reporting and as a consequence, suboptimal drive-thru management.

Installation costs

Installation of an ILD can vary from 3 to 4 hours per loop detector, depending on site complexity. With a loop for each entry/order lane and one per order collection point, 4 to 6 hours of lane closure during the installation of a two loop drive thru system is to be expected which compares with 1 to 2 hours for an above the ground solution, like Eyecue™.
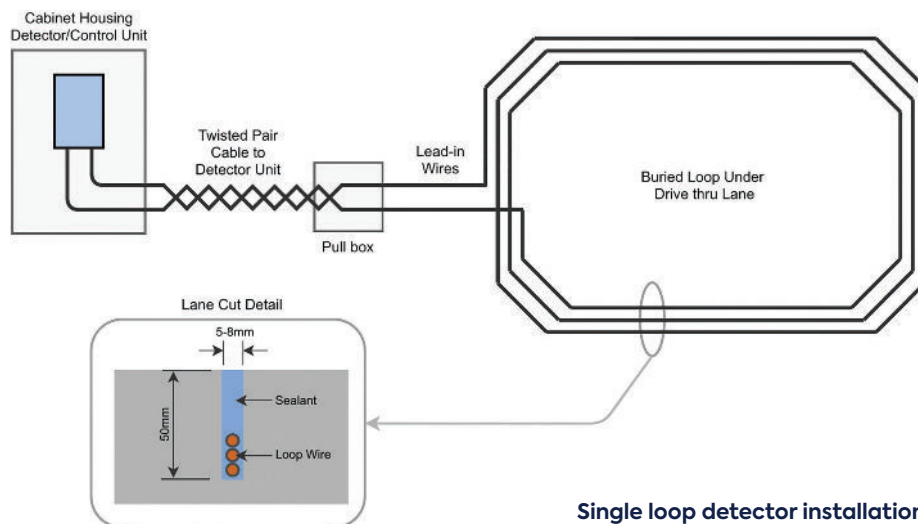
Single loop detector installation

Impact of installation errors

The expected lifespan of a loop system is 8–10 years but installation errors are very common and can result in significant maintenance issues. While some issues are easy to detect, others are more challenging and the proximity of other electromagnetic sources can interfere or even temporarily jam the signal of a loop detector.

Loss of data and business performance is the first indicator of a sensor malfunction. If the drive-thru lane needs to be closed for repairs or complete replacement, the potential for loss of revenue becomes significant.

Variances in lane repairs

The type of loop detector has significant influence on the expected intervals between lane repairs. Loops with sharper/square corners are much more susceptible to rupture of the surrounding roading material. Once a crack develops, water egress and temperature variations speed up the deterioration;

loose material can damage the insulation around the loop wires creating a fault. If the initial install is substandard then the likelihood of multiple repairs increases dramatically.

Sensitivity analysis conducted by Christopher Sobie of EIT Northern Arizona University reveals that,

> "As the lifespan of a loop detector is shortened, the life cycle cost increases exponentially. Decreasing the life span from ten years to six years results in an increase in life cycle cost of 50%. However, decreasing the life span from five years to one year results in an increase in life cycle cost of 596%" [1].

Operational limitations

Statistical analysis backed by human validation of a cross section of drive-thru restaurants found that ILD systems provided an average ≈70% accuracy. While some errors can be attributed to the quality of installation, maintenance and local sources of interference, Fingermark™ found there are fundamental limitations which result in loss of accuracy.

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[1] Life Cycle Cost Analysis of Vehicle Detection Technologies and their Impact on Adaptive Traffic Control Systems Christopher Sobie, EIT Northern Arizona University Arizona ITE District 4255 E Soliere Ave, Apt 229 Flagstaff, AZ 86004 (414) 412-7854 ces327@nau.edu

How the loop induction detector works

In simple terms an electric current is passed through the loop creating an electromagnetic field.
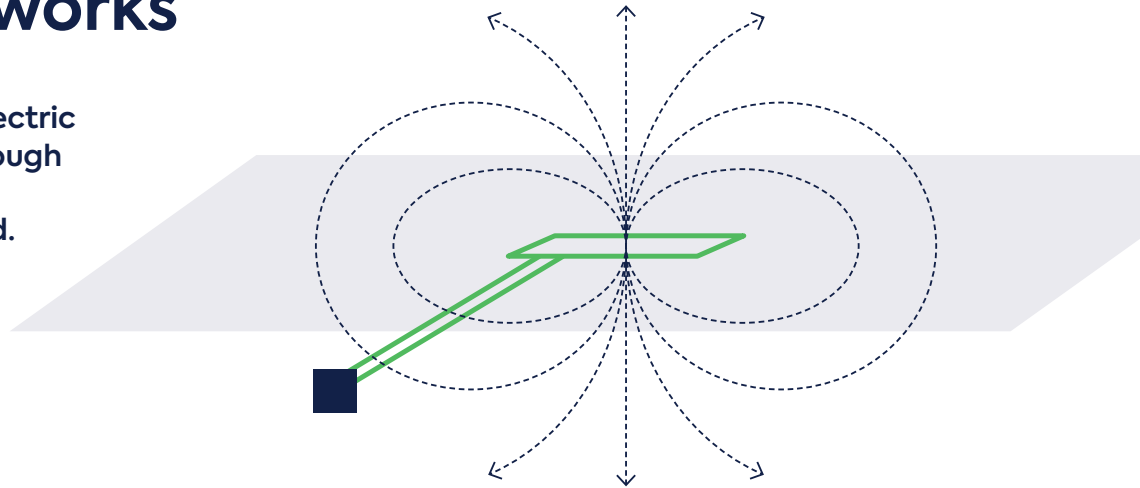
When a conductive material (eg. a vehicle) is placed over the electromagnetic field, it absorbs some of the energy creating a signal level change which is detected by the electronic detector unit. The size of the conductive material and its proximity to the loop detector determine the size of the signal change; the closer the vehicle is to the detector the stronger the signal. It is therefore critical for a loop detection system to find a balance between positive detection of vehicles and the best sensitivity for the location/conditions.

The research undertaken by Fingermark™ has driven the need for a solution which not only provides greater accuracy of data, but can actively help QSR clients to optimise their resources to drive higher revenue and maintain customer satisfaction.

Meaningful data and actionable insights

Fingermark™ has been working with major global QSR chains to gain a deeper understanding of the metrics that determine the success of a restaurant and its drive-thru. Collecting the right data accurately is very important but having the insights which provide true meaning behind the numbers sets Fingermark™ apart from the rest.

Eyecue™ is a proven Artificial Intelligence (AI) platform that tracks vehicles and human interactions throughout the drive-thru delivering 98% accurate data# enabling true and reliable performance analysis.

 # To date Fingermark™ has processed more than 24m customers journeys; more than 150K journeys/day

Eyecue™

>40 million
customer journeys

>150K
customer journeys/day

98%
timing accuracy

| Feature	Eyecue™	Loop
Analytics Platform	✓	✓
Order Window Times	✓	✓
Cashier Window Times	✓	✓
User Configurable Live Dashboards	✓	✓
Gamification	✓	✓
Vehicle Pull Outs	✓	
Pre-order Line Ups	✓	
Parked Cars	✓	
Pull Forward Window Times	✓	
Wait-Bay Times	✓	
Human/Vehicle Interactions	✓	
Vehicle Re-acquirement	✓	
Configurable Databoards	✓	

Measuring splits

A key metric for measuring drive-thru performance is the customer's transition time from start of the drive-thru to food in hand. Legacy ILD systems provide a start and a stop time only, which is limited in value. Let's consider the analogy of a world class athlete running a race that covers 10km. The runner has a target time to complete the run, however in order to measure progress and pace themselves they use split times and review these splits post race to determine where to focus their training for the next race.
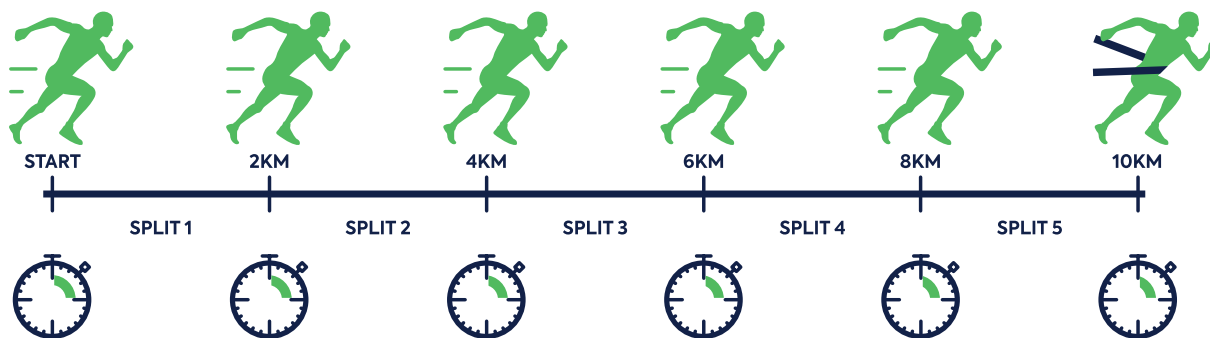
Eyecue™ works in very much the same way, by providing timed stages (splits) throughout the drive-thru to provide real insights into which stages are working well and which need attention. This becomes invaluable information when displayed on workstation dashboards for real-time monitoring. As the drive-thru traffic fluctuates during the day, staff are able to understand at a glance when to increase customer momentum and when they can afford to spend more time with a customer to potentially upsell product.
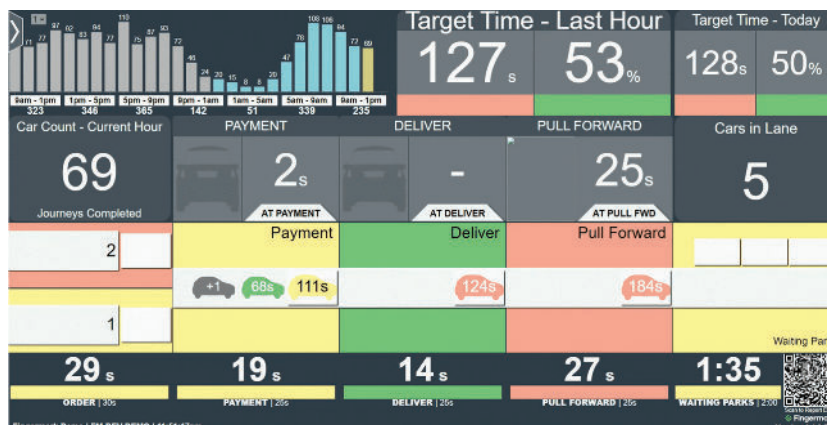
Increased visibility and understanding

Eyecue™ has been designed to increase visibility and understanding to allow QSRs to optimise their drive-thru. By monitoring particular regions of interest throughout the drive-thru Eyecue™ provides a complete view of your drive-thru's performance. Providing visibility of the lead up to the point of order, staff are able to detect a customer entering the drive-thru during a quiet period or monitor a growing queue during busier periods. Eyecue™ can also provide insight into customer vehicles baulking (pulling out of the drive-thru) using our unique trajectory mapping, allowing restaurant managers to understand when valuable customers feel the queue is too long. Regular baulks may indicate the need to adjust or expand the drive-thru.

At the other end of the drive-thru we often see the need to pull cars forward or park in wait bays while their order is completed. This is the equivalent of stopping the clock on our runner 8km into the 10km race. Without a true understanding of how long an order takes to be completed in full, it is impossible to get a deeper understanding of the restaurant's performance and how changes to the business impact the drive-thru.

At Fingermark™ we understand that there are many factors which can influence the time it takes for a customer to transition through a drive-thru. Eyecue™ is specifically developed to present the most accurate data with the ability to be integrated with other Fingermark™ products and your business systems to deliver better insights.
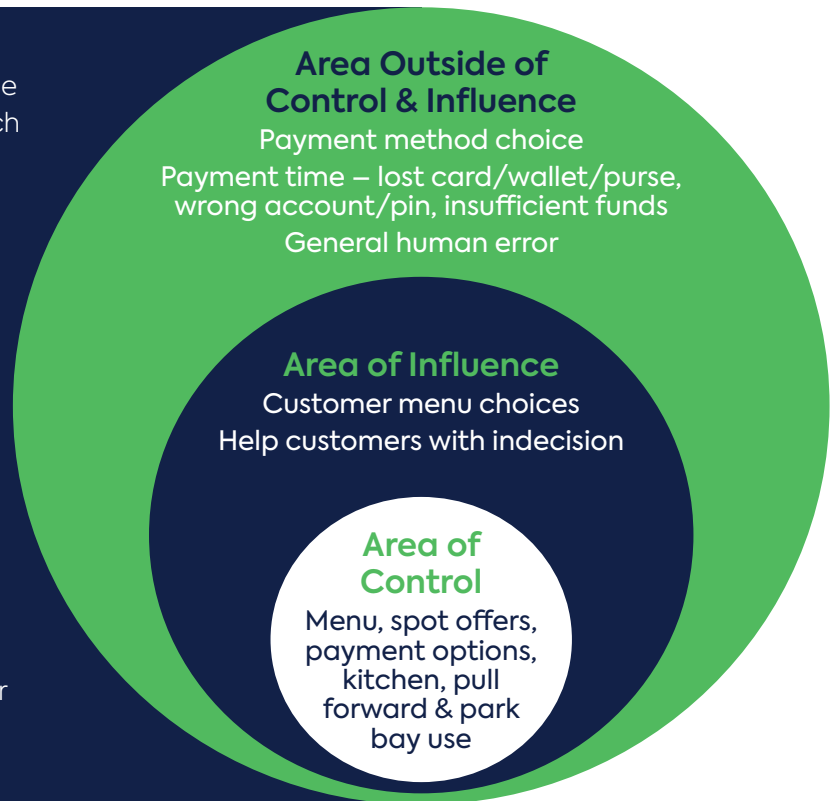
Areas of influence –
a restaurant's perspective

It's important to consider the stages of the drive-thru experience to understand which can be controlled or influenced.

Stages controlled by the restaurant and their associated "split times" can be measured and adjusted to optimise performance.

Other stages controlled or influenced by the customer – and while these "split times" are just as important – can detract from the restaurant's performance.

Much like our runner fighting a strong head wind for 2km. Whilst their split time will look poor and impact their overall race time, it is not a true reflection of their performance.

Area Outside of Control & Influence
Payment method choice
Payment time – lost card/wallet/purse, wrong account/pin, insufficient funds
General human error

Area of Influence
Customer menu choices
Help customers with indecision

Area of Control
Menu, spot offers, payment options, kitchen, pull forward & park bay use

Fingermark™ understands the importance of presenting data with the correct emphasis. Understanding which split times are outside the control of the restaurant enables a weighting to be placed on these splits within the reporting structure; presenting the average times in a histogram provides a weighted view of the performance.

We collect data at multiple points throughout the drive-thru, allowing a deep dive into the split times for various stages to gain a more in depth understanding and enable the information to be used to drive operational efficiency.

Take payment
4 seconds faster

Serve food
6 seconds faster

True journey time
10 seconds faster

Fingermark™ | Smart Business Solutions

Visibility of true journey time

Eyecue™ camera

vs

Loop

1	Start	**4**	Order Delivery
2	Order	**5**	Pull Forward
3	Pay/Cashier	**6**	Park/Wait Bay

1	Order
2	Payment
3	Delivery

Tracking humans and vehicles

Eyecue™ has the ability to track humans and vehicles (using heat mapping) around the pull-forward and waiting bays, enabling the exact time when the customer's order was handed through the vehicle window to be determined.

Trajectory mapping helps us to identify the optimal points to track; both human to vehicle and vehicles themselves. The image presents trajectories of people around the waiting bays enabling the cameras to focus on and detect the point of order handover (note cars and individuals are not shown by Eyecue™ to protect privacy).

Understanding what prompts are important

By aligning the time of day and day of the week we can understand how busy and slower periods impact the speed of service at each stage. By dynamically adjusting the target times* for individual stages and utilising the Eyecue™ dashboard and station audio and visual prompts, staff can be encouraged to optimise the time spent with each customer maximising revenue while maintaining customer satisfaction.

Legacy systems provide very little help to diagnose the issue or prevent it happening again. If the restaurant was using Eyecue™ the story would be completely different; poor performance days can be delved into to explain why a restaurant may fail to meet their KPI for the month.

Summary

Eyecue™ utilises AI insights, predictive analytics and prompts to improve your speed of service.

- ✔ Greater visibility of full customer journey
- ✔ Deeper understanding of your drive-thru
- ✔ Real time data to motivate, engage and drive staff performance
- ✔ Enables fast, accurate operational decision making
- ✔ Optimal customer satisfaction
- ✔ Increased revenue in a constantly changing market

* Eyecue™ uses machine learning algorithms to propose benchmark split times based on historical data. These can be used by management directly or to help choose appropriate benchmarks for KPIs.

To find out how to optimise your Drive Thru...

Contact Fingermark™ today!

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Fingermark™

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