

MOU signed with Edgify to develop first of its kind self-checkout technology using visual recognition that does not require servers or cloud

Highlights:

- **Shekel Brainweigh and UK software company Edgify are combining their core competencies – advanced weighing and visual recognition together with state of the art AI training on edge devices – to develop visual recognition capability in self-checkouts.**
- **Game changer technology incorporating visual recognition into self-checkout systems for real-time fresh produce identification, allowing a more accurate and faster checkout process and higher level of security for retailers.**
- **Collaboration demonstrates Shekel’s continued efforts to bring added value and make changes to the global self-checkout market and enhance its footprint through the implementation of new technologies.**

Advanced weighing technology company **Shekel Brainweigh Limited (“Shekel” or the “Company”)** is pleased to announce that it has signed a non-binding Memorandum of Understanding (MOU) with cutting edge UK software company, Edgify to implement a game changing technology for the self-checkout market.

Edgify and Shekel have entered into the non-binding MOU to collaborate in the implementation of a new first mover technology to provide an automated, and real-time, visual recognition system for fresh produce (fruit and vegetables) for the adoption in self-checkout machines. Shekel and Edgify will implement a software solution that will identify fresh produce automatically on self-checkouts, without the shopper having to identify and select the actual item at the self-checkout.

The combination of Shekel’s superior weighing technology and Edgify’s machine learning with edge training technology will be the first system of its kind to allow self-checkouts to train themselves, solving a major issue for retailers and dramatically improve the efficiency of the retail supply chain.

The system will provide a superior solution due to Edgify’s Artificial Intelligence (AI) training framework, whose ongoing learning can reach a 99% accuracy in detection compared to 50% to 60% from current generation technology. More so, Edgify’s edge training solution means that no data has to leave the store. AI is trained locally without the requirement for cloud storage. The solution will give retailers the opportunity to speed up the checkout process for consumers, providing more accuracy and security, as well as introducing a more efficient and secure transaction for consumers, whilst allowing for a higher quality experience.

The next steps are for the parties to finalise the non-binding MOU into a binding agreement. Marketing efforts and discussions are underway with major global retailers.



Shekel is an Original Equipment Manufacturer (OEM) with a strong foothold in the global grocery retail market, selling its weighing solutions to blue-chip global customers such as Toshiba, Fujitsu and Diebold Nixdorf. The Company has historically developed a hardware weighing solution which identifies products by weight using deep learning and sophisticated algorithms, and through this collaboration the Company is increasing its footprint in the global self-checkout market with its Fast-Track technology.

The global retail sector is undergoing major changes and transitions, particularly with the replacement of manned checkouts for self-checkouts. Supermarkets offer on average more than 35,000 different items and the market is looking for greater efficiency and accuracy, reduced shrinkage (theft) and an enhanced customer experience, and this is where Shekel brings its deep experience in self-checkout weighing systems and understanding global retailers' needs.

To date, there have been multiple attempts with respect to developing visual fruit and vegetable recognition, but its use in self-checkout machines requires access to vast amounts of data in order to make the process efficient and economical, which has contributed to the failure of market adoption. Edgify is addressing this issue having developed a system that can process large amounts of data for machine learning using an edge device (the Self-Checkout machine itself). Sending data to the cloud is a very costly process with Google Cloud Platform charging 1,000 stores more than US\$7.2 million in cloud computing power per annum¹. With Edgify's solution the training takes place on the scale itself, instead of sending all the data (such as images) to the cloud, allowing the system to handle vast, ongoing and growing information over time.

The self-checkout industry is a growing market with the number of self-checkouts worldwide expected to increase to 468,000 by 2021, up from 240,000 in 2016² providing an easily quantifiable ROI for Shekel. The demand for these systems is influenced by the increasing trend towards autonomous retail. A recent study of over 9,000 Australian and New Zealand retailers revealed a loss of more than \$3.3 billion in 2018² alone with half attributed directly to shoplifting. Retailers are turning to technology to help tackle shoplifting, and given the efforts retail chains are investing in self-service and self-checkouts, Shekel is confident it can play a major role in this growing market.

Commenting on the agreement with Edgify, Shekel Brainweigh CEO, Yoram Ben Porat, said:

"We are very excited to be working with Edgify to develop a first of its kind technology for the retail market to provide increased speed, accuracy and security in the self-checkout experience for consumers while increasing efficiencies for retailers. By combining our market-leading weighing technology with Edgify's software ability for deep learning training, we are in a fantastic position to present an enhanced self-checkout technology to the market to allow for a much more improved shopping experience. The aim of the solution is to increase customer satisfaction, provide faster throughput at the checkouts while reducing the human error factor. Shekel has been selling advanced weighing solutions to the retail sector for over 30 years, and now with the use of software technology, we can step up our offering.

"Theft at self-checkouts is also a major problem for retailers, with many incidents of consumers scanning through cheaper fruit and vegetables – something as simple as scanning an avocado as a

¹ <https://cloud.google.com/solutions/transferring-big-data-sets-to-gcp>

² <https://www.theguardian.com/global/2018/may/20/nation-of-shoplifters-supermarket-self-checkout>

² <https://www.smh.com.au/business/companies/stealing-with-impunity-crime-costing-retailers-over-3-3bn-a-year-20190725-p52akn.html>



brown onion – in order to avoid paying higher costs. With this new technology, we believe we can reduce shrinkage for retailers to help ensure they are running profitable operations.”

Edgify’s Strategy Director, Lucia Mancisidor, added:

“This partnership with Shekel, presents an opportunity to unlock the potential of using an edge device to enable ongoing learning for visual recognition in self-checkouts. With vast amounts of continuously changing data needed to train machines for visual recognition, this solution is yet to be recognised at a retail level. By using the self-checkout systems as a learning platform, we can avoid standard issues inherent with using the cloud – making operations for retailers more efficient and economical.

“Shekel is a market leader in weighing technology and a perfect partner to develop the ultimate self-checkout solution. We look forward to working with Shekel’s experienced team in delivering this disruptive technology.”

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Investor relations and media enquiries

FTI Consulting

Level 47, Central Park
152-158 St Georges Terrace
Perth WA 6000
+61 (0) 8 9321 8533
Elodie Castagna
Elodie.Castagna@fticonsulting.com
www.fticonsulting.com

About Edgify

Edgify specialises in using ‘edge devices’, rather than the cloud to implement deep learning training models for a range of industries. By using an edge device for the analysis and training of information it reduces the risks associated with transferring sensitive-data to or from an external server. This allows businesses to train on the entirety of their data, and reach accuracy levels never achieved before.

About Shekel Brainweigh

Shekel Brainweigh has for over 40 years been a global leader in developing scale and weighing technology. The company provides weighing solutions to the highly regulated retail and healthcare markets via global giants such as Toshiba, Fujitsu, Diebold Nixdorf and others. Utilising its experience in weighing technology, Shekel Brainweigh is developing a suite of new products aimed at meeting the challenges that traditional retailers face today, such as store automation, operational efficiency including overstock and understock issues and enhancing the consumer experience.

Shekel’s patented combination of weighing technology with Artificial Intelligence (AI) and Internet of Things (IoT) technology has led to the development of their “Product Aware Surface Technology”. Shekel Brainweigh is committed to continuing to innovate and expand into global markets.

To learn more about Shekel Brainweigh, visit <http://www.shekelbrainweigh.com/>