



the future of retail



Executive Summary

The era of search is over, and we have won the data war. Our personal data belongs to us and to us alone, and we get paid to share it. This has created a sustainable and symbiotic relationship between the retail world and our needs and wants.

As a result, the world of retail has become optimally efficient; where customers save money, businesses are profitable, communities have displaced monopolies and duopolies, and citizens have reduced their carbon footprint.

This is Beam's vision for the future of retail, and we have been building it since 2011.

Beam is a 21st century global payments acceptance platform with built-in support for smart contracts. We created Beam to overturn the status quo in the retail value chain; where stakeholders engage with their customers in a direct, meaningful and effective manner.

The Beam Platform does this by enabling stakeholders across the retail value chain to incentivise desired customer behaviour by defining measurable goals with an attached monetary reward for their achievement.

The blockchain startup space is brimming with great ideas, many of which have the potential to be highly disruptive and innovative. What makes us different is our track record: we have been building out the Beam Platform since 2011. In that time, we have developed relationships with stakeholders ranging from mom and pop stores to enterprise retailers, brands and distributors such as Carrefour, Costa Coffee, ALDO, Tommy Hilfiger, Unilever, Coca-Cola and many more.

Today Beam's technical network reach exceeds 400,000 stores globally, with over 5,000 live stores in three continents. Having executed over 4.3 million smart contracts with a total throughput in excess of \$250 million, we have proven the benefits of the Beam Platform at scale. Using a token economy specifically built for retail, we are opening up Beam's proven smart contracts protocol to the world to accelerate our growth globally.

Beam harnesses the power of the internet, mobile phones and blockchain to help retail value chain stakeholders, their customers and a network of participants come together as a community incentivised with \$4.5 trillion each year to end the data war and disrupt the incumbents in payments, such as VISA and Mastercard along with tech giants that trade our data for profit maximisation.

Our ambition to make this vision a reality is matched by our domain expertise, ability and experience.

Version Tracking

Version	Date	Changes
Version 0.5	22 Jun	Limited community release
Version 1.0	29 Jun	Incorporate community feedback
Version 1.2	25 July	Incorporate community feedback - refined token model
Version 1.3	01 Aug	Minor spelling and copy updates
Version 1.4	07 Aug	Structure and copy updates
Version 1.5	14 Aug	Structure and copy updates
Version 1.6	16 Aug	Removed old reference to Stellar
Version 1.7	3 Oct	Update to Hard Cap
Version 1.8	9 Oct	Earning tokens, figures update
Version 1.9	11 Oct	Minor text updates

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Glossary

Term	Description
Stakeholders of the retail value chain	Businesses that take part in production and delivery of products and services to customers. These include factories, distribution networks, brands, shopping centres, malls and retailers.
Issuer	Traditionally, a bank that issues credit or debit cards and is responsible for processing transactions on behalf of customers.
Acquirer	Traditionally, a bank that's responsible for processing transactions on behalf of merchants.
Network participant	Provides services to stakeholders of the retail value chain. These include app developers, Point of Sale vendors and other technology companies that specialise in solutions for stakeholders of the retail value chain. Also referred to as "participants" throughout the white paper.
Beam Platform	The technology that enables the features and functions of Beam. Consists of technical infrastructure and source code comprising APIs, SDKs, database schemas as well as user interfaces.
Beam Network	Payment acceptance network and refers to stores that accept Beam as a payment method and customers who use it to make payments with.

Introduction

The future

The year is 2030.

Elon Musk lives on Mars and robots are doing everyday tasks we don't want to do. Stuff we don't need sells itself, and stuff we do need finds us. Homes declutter and replenish intuitively and grocery lists write themselves.

The era of search is over, and we have won the data war. Our data belongs to us and to us alone, and we get paid to share it. This has created a sustainable and symbiotic relationship between the retail world and our needs and wants.

In a short 12 years, the world of retail has become optimally efficient. Customers save money, businesses are profitable, communities have displaced monopolies and duopolies, and citizens have reduced their carbon footprint.

How did this happen?



The present day

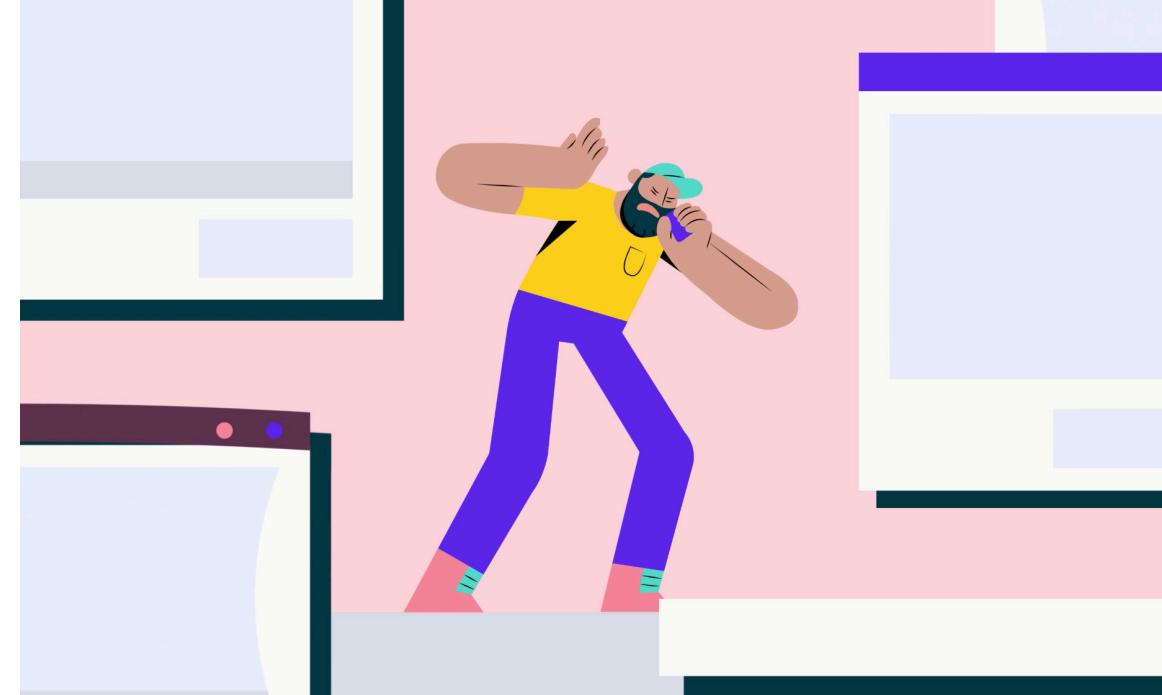
We spend a substantial part of our lives searching. Searching for the right pair of shoes, the right type of bread, the right place to live, the right spot for lunch and even the right person to love and to hold for the rest of our lives. It's a reality we've grown accustomed to. Advertising pretends to bridge this gap between retailers and customers, but advertisements (ads) today come from fragments of our data stored by disparate companies.

Since the fragments don't tell a person's whole story, we are hit with billions of ads, hoping something will stick. In response, we've trained ourselves to innately block them. A 2010 study showed that as many as 43% of web users automatically ignore banner ads, a phenomenon called "banner blindness".

In modern day advertising, customers are just targets to hit. Instead of having a meaningful, personalised and contextual engagement with relevant brands, customers are bombarded with ad spam.

Unknowingly, we pay for ads we don't need, retailers get trapped by the status quo, the supply chain keeps overproducing and retailers keep over-advertising to an audience that isn't interested. This has real consequences. Small enterprises close down every day, jobs are lost and things that didn't sell end up in landfills and oceans, and yet people get paid close to nothing to keep producing unwanted items.

It is a vicious cycle of misaligned incentives and waste.



"Half the money I spend on advertising is wasted; the trouble is, I don't know which half."

- John Wanamaker (1838 - 1922)
American department store magnate, proponent of advertising and a "pioneer in marketing".

Beam, the proven model

Our vision is to create a future where every product and service is perfectly matched to our needs and wants; and knows the customer it's destined for in advance. We are no longer wasting our time searching for products and services; and the retailers are not wasting their money searching for us. Instead, what we need and want find us at the right time, right place and for the right price.

Beam is a global payments acceptance platform for the 21st century with built-in support for smart contracts. Rather than wasting over \$4.5 trillion on payment fees, utilising unmeasurable marketing and inefficient processes, we created Beam to allow stakeholders of the retail value chain to reward their customers directly.

Existing retail clients



CALVIN KLEIN



Over 14,000 terminals at 5,000+
stores accept Beam



#5 in Financial IT Pathfinder Rankings for 2016/2017

Coming in at No. 5 on the Top 50 most promising startups in from across Europe. Voted by an expert Panel, consisting of industry veterans, venture capitalists (VCs) and Financial IT's senior editors and research analysts.

[View award details](#)

The Beam Platform does this by enabling stakeholders across the retail value chain to incentivise desired customer behaviour by defining measurable goals with an attached monetary reward for their achievement. This allows all parties to engage in a meaningful and prosperous journey.

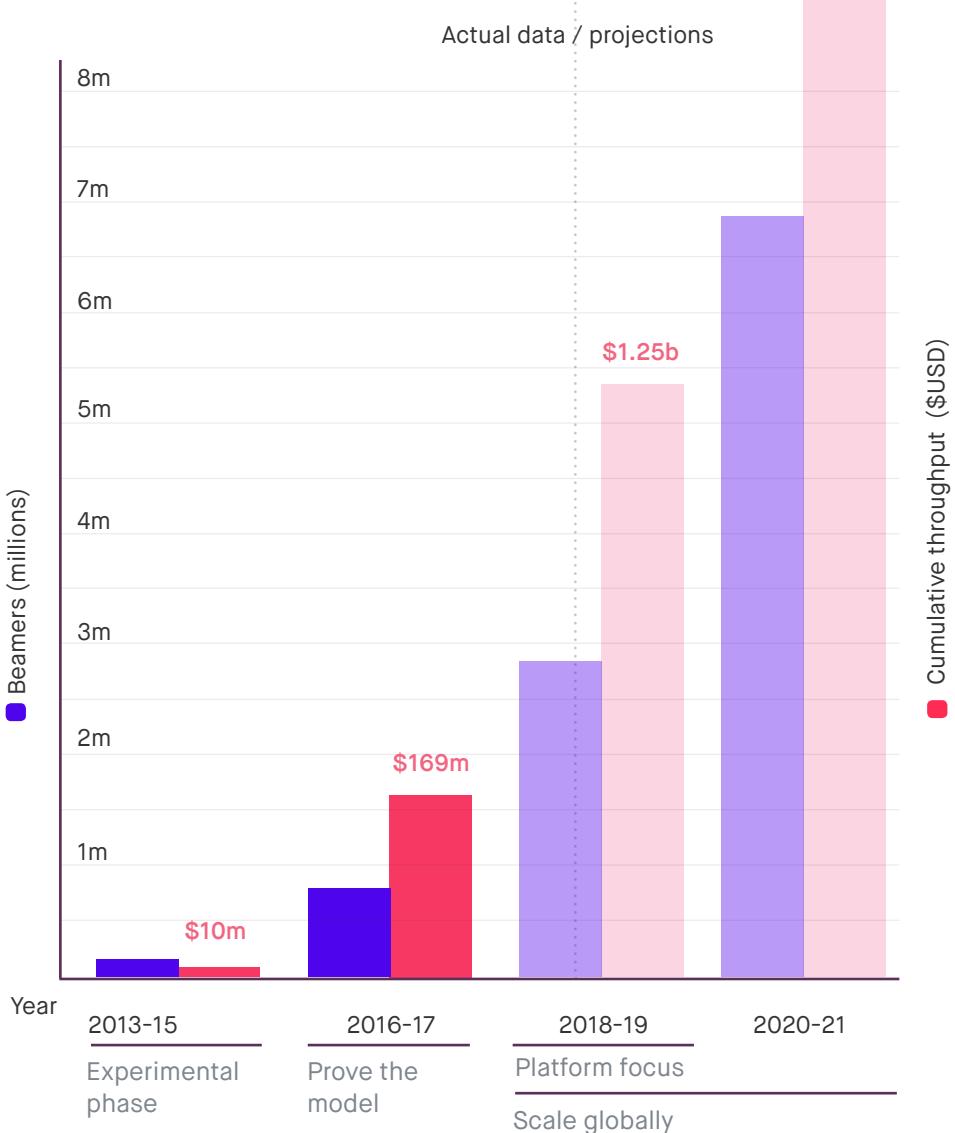
Since Beam's inception in 2011, we have proven its value proposition at scale. We are now opening Beam to the world to build the future of retail. A future that is optimally efficient and equally resilient.

Repairing the retail value chain

Many attempts have been made to improve the retail value chain, however, they all remain iterative in nature or tackle issues on a symptoms-level at best. We are targeting the root cause of the flaws and inefficiencies present in the current retail value chain.

These inefficiencies created by centuries-old, outdated models and misaligned incentives have led to a war over our data. It is a war that has birthed companies like Google and Facebook that jointly control over 74% of all digital advertising globally and Amazon that has captured nearly 1% of the entire global retail economy. It is a war that can be stopped.

Cumulative throughput (historical and projections)



Backed by industry-leading partners

We had the opportunity to work with some of the most influential and experienced individuals in the industry.

All of our partners have extensive experience in payments, fintech, blockchain and currency design.



Oliver Bussmann

Founder and CEO - Bussmann Advisory AG

- Featured in the “Top people in Blockchain” list by Cointelegraph - top.cointelegraph.com
- A globally recognised technology thought leader and driver of large-scale transformation at multinational organisations.
- President of the Swiss Crypto Valley Association, Global Ambassador for UK-based Innovate Finance and as a Board Member of Identity 2020.
- Former Group CIO at UBS, SAP and Allianz (North America & Mexico).



Vinay Gupta

Founder - Matthereum

- Featured in the “Top people in Blockchain” list by Cointelegraph - top.cointelegraph.com
- Co-ordinated the release of the blockchain platform Ethereum.
- Architect of the National Blockchain Strategy for Dubai.
- Partner at Hexayurt Capital and creator of the Internet of Agreements thesis.



Roel Wolfert

Owner & Non Executive Director - VGRIP

- 20 years experience in retail technology, banking, payments, retailing, management consulting, IT and venture capital.
- Entrepreneurial, C-level and general management roles in a range of companies from large technology service providers to marketing driven organisations and start-ups to blue chip companies.
- Previously, at VISA Europe responsible for client consulting and analytics.

Industry leading partners



Edgar Kampers

Founder & Chief Currency Officer - Qoin

- Qoin is a social enterprise that creates, develops and supports impact-driven currencies and blockchain initiatives aiming to realise a significant, lasting impact.
- Community currency expert since 1993, with a focus on monetary design, policy strategy, value propositions and impact assessment.
- ICO Advisor, tokenomist and crypto-economist. Supports developing and improving tokenonomies, ICOs, and blockchain related projects including BrickEX and Dateum.



Kebbie Sebastian

Managing Director - Penser

- Kebbie leads Penser, a strategy consulting firm focused on payments and fintech, based in London.
- Previously, Kebbie was responsible for Global Product Development at Barclaycard and held senior leadership roles at PayPal and Bank of America.
- Holds an MBA from the University of Virginia's Darden School of Business, USA.



Sergey Yusupov

Director - Rapid SD

- Senior Blockchain and Stellar platform developer.
- Founder of UAE Bitcoin meetup group.
- Director of Rapid SD software development and consultant to large industries and ICOs.
- MS in Computer Science and Quantum Cryptography.



Stan Prikhodko

Head of Crypto Asset Management - GEM Capital

- Prior to joining GEM Capital Stan was engaged in trust management of cryptocurrency assets and consultations on investing in ICOs for high net worth individuals.
- Stan is an ambassador of the project of next generation crypto currency Enecuum.

Leadership Team



Serdar Nurmammedov

Co-Founder & Chief Executive Officer

- Responsible for user engagement, product strategy and development.
- Previously a product owner at various positions at Fairfax Digital and Transport NSW in Australia.
- Holds a Bachelor of Business majoring in International Business and IT from University of Technology, Sydney.



Shezan Amiji

Co-Founder & Director

- Focuses on investments, strategic partnerships and new markets.
- Previously founded the first urban tabloid newspaper in the Middle East, 7DAYS, driving it to profitability within 10 months of launch.
- Holds an MA from the University of Oxford in Politics, Philosophy and Economics and an MBA from Wharton School of Business.



Nadim Khoury

Co-Founder & Director

- Heads retailer network and operations.
- Previously, Director at Cisco (Middle East).
- Holds a BA from Royal Holloway (UK), University of London.



David Horne

Chief Technology Officer

- Joined Beam in May 2015 and boasts 19 years of experience in software engineering.
- Prior to joining Beam, spent 7 years at Simple Machines (Australia), where he worked on various projects including large defence and finance operations as well as simple start-ups.
- Previously at Fairfax Digital and Fujitsu.
- Holds a BSc from Macquarie University.



Bengt Nilsson

Director

- CEO and President of Pagero.
- Co-founded IFS AB and was CEO of IFS Group between 1983 and 2003.
- Under Bengt's leadership, IFS rose to become one of the larger tier 1 players in the ERP industry, competing with Oracle, SAP and Microsoft Business.
- Studied engineering at Linköping Technical University, Sweden.



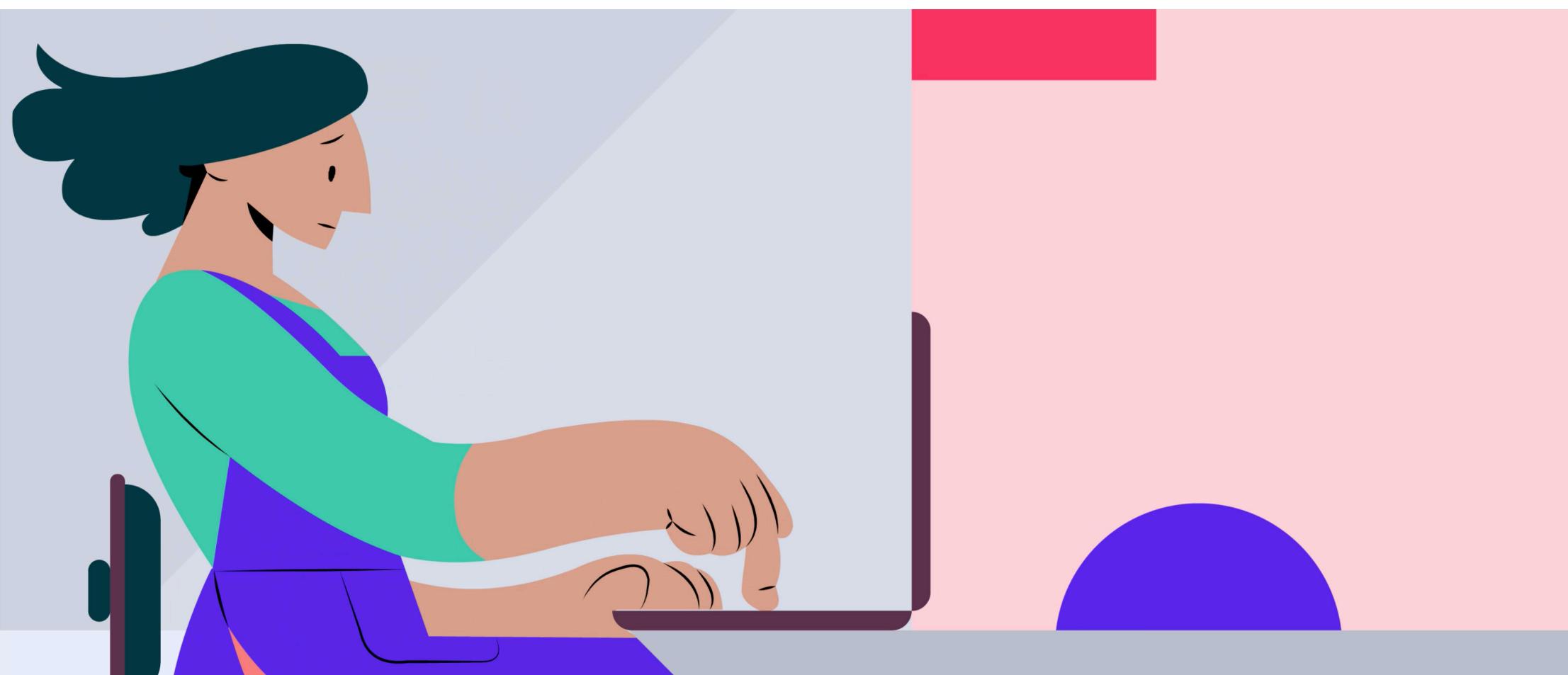
Holly Stephens

Chief Marketing Officer

- Founder of Triangles.xyz - helping women take their first steps into entrepreneurship.
- Founder of Springstart - Marketing partner for startups in Sydney and London.
- Previously Product Marketing Manager for Android Pay at Google.
- BA (Hons) Business Management & Marketing - Nottingham Trent University.

The Problem: When Incentives are Misaligned

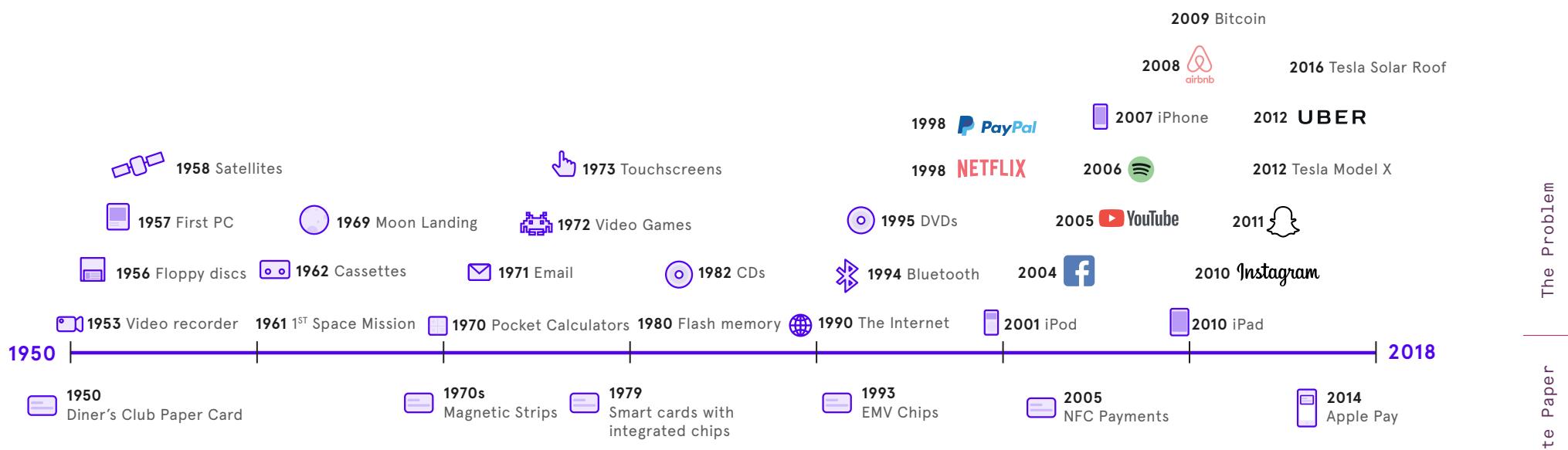
The interests of the retail value chain and its service providers, particularly in payments (VISA, MasterCard and other card schemes) and marketing (tech giants Facebook, Google and Amazon), are in conflict and are naturally incentivised to game each other in a manner that renders the retail value chain as a whole extremely inefficient and an ecosystem that's perpetually damaged.



Decaying payments infrastructure

The credit card was invented in the 1950s, before the internet or smartphones. While card transactions have improved since the 50s, they are still iterations on the concept of a physical card. We have built an entire world of payments around the concept of cards and are now unable to free ourselves from it. Unlike the music or television industries, payments has not evolved at all.

*Payment cards outlived tape cassettes and still thrive
in an age that's outgrown them*



The annual cost of processing consumer to business transactions worldwide is in excess of \$1 trillion, and this is only the tip of the iceberg. The real impact of the decaying payments infrastructure is without a doubt much larger than what the eye can see. This includes the cost of securely storing card data as well as fraud - all of which is avoidable with innovation. Contactless solutions such as Apple Pay, Samsung Pay or Android Pay are merely a band-aid on many layers of archaic legacy systems.

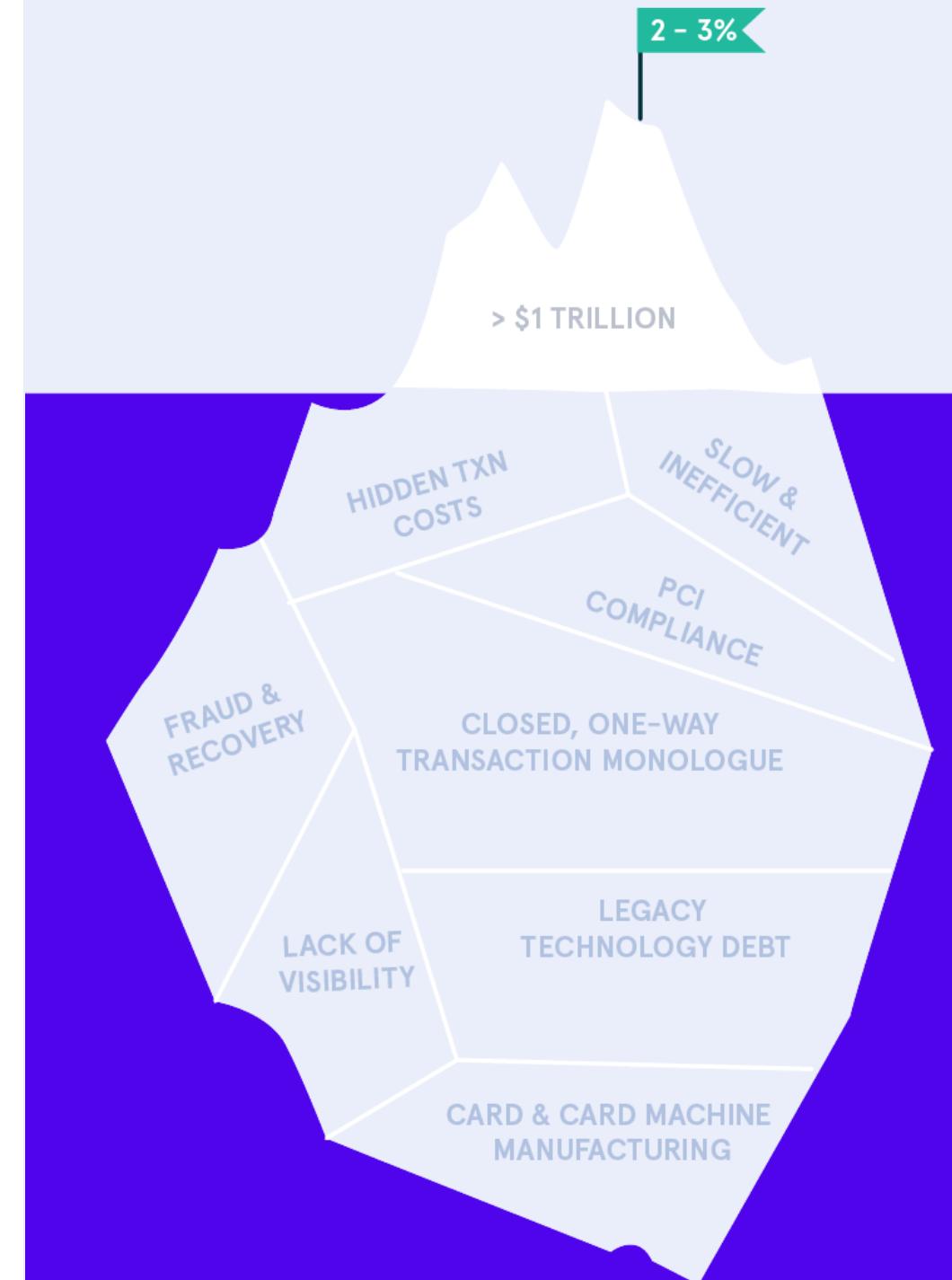
"The electric light did not come from the continuous improvement of candles."

- Oren Harari

Put simply, payments were not built for 21st century commerce, and iterations of it today still ignore consumer needs and wants. In the promise to bridge the gap, tech giants came into the picture.

Tech giants take on marketing

The internet changed customer behaviour. While this provided some advantages in the ecommerce world, offline retailers are still left in the dark. Tech giants (in partnership with media companies) came in promising to bridge the payments gap by taking on the role of marketing. They did this by collecting all our data and created a new business model norm of maximising revenue out of it.



The data war

The large scale, blind collection of personal information ignited a data war. The stakeholders of retail are too busy at war with each other and with the tech giants over our data to notice that no one is putting in effort to decipher what the customer actually needs or wants.

Deciphering needs and wants

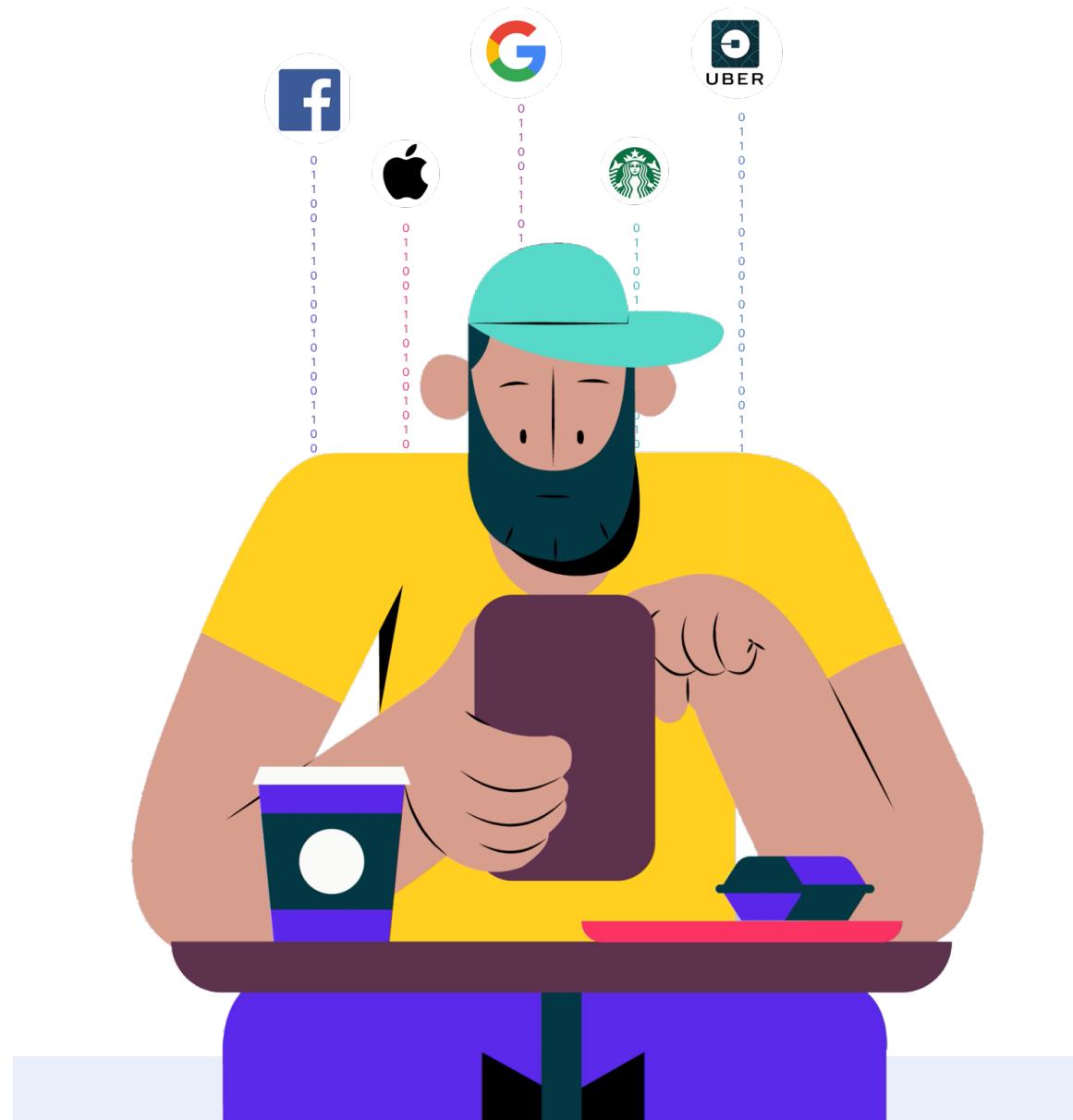
The retail value chain is inefficient because no one truly understands customer needs and wants.

Companies with which we come in digital contact own fragments of our data in siloed centralised databases. Each party holds a piece of the puzzle, but no one has a complete picture of individual customer behaviour, which dictates demand and supply.

Tech giants together with incumbents in payments monopolise this loophole to reinforce a product-driven economy that exploits the retail value chain. While the technology is available to take the retail value chain to the 21st century, the barriers to innovation are too powerful to overcome.

Customers become the product

The tech giants' growth in popularity across customers and retailers has been astronomical. They've done this in the guise of connecting people through their free services. The line between user and customer is blurred. They think up new ideas to keep us addicted to their product, and then sell our attention for profit.



More advertising fails as a solution

Our attention is a commodity measured by ad space. Tech giants sell ad spaces and data. The data they sell is then used to create ads to fill the very ad spaces they own. Unfortunately, none of this solves the very problem everyone thinks they've cracked - understanding customer needs and wants.

In advertising, a 1% conversion rate is considered a significant success. This ineffective form of marketing fuels the existence of tech giants, whose business models solely depend on advertising revenue or trading our data. On the flip side, it does nothing for customers and very little for the retail value chain - remember banner blindness?

Stakeholders of retail keep competing for our attention by increasing advertising, instead of truly understanding customer needs and wants. Competing in the wrong space results in a vicious cycle of poor decisions.

A Status Quo Juggernaut

In an age that's outgrown them, barriers to creating a customer-driven economy still exist and even thrive because of status quo. Tech giants along with media oligopolies and incumbents in payments have taken retail hostage by exploiting their stranglehold for maximum gain.

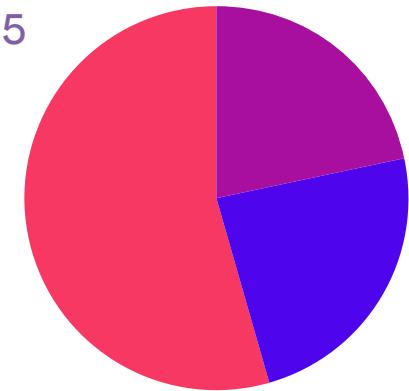
Zero incentive to change

The global annual retail economy is worth \$25 trillion. Inefficiencies in the retail value chain costs us over \$4.5 trillion each year in the form of waste, opportunity and cash cost amounting to \$18 of every \$100 spent and a massive \$2,800 tax per household. Waste and opportunity cost are born out of erroneous decisions in production planning and pricing strategies, while cash cost arises from heavy reliance on intermediaries in payments and marketing.

Payments are disconnected from advertising; payments and advertising are disconnected from retail and its customers. With revenues growing each year, the tech giants and other incumbents have no incentive to change the status quo, locking the entire retail value chain into a vicious cycle.

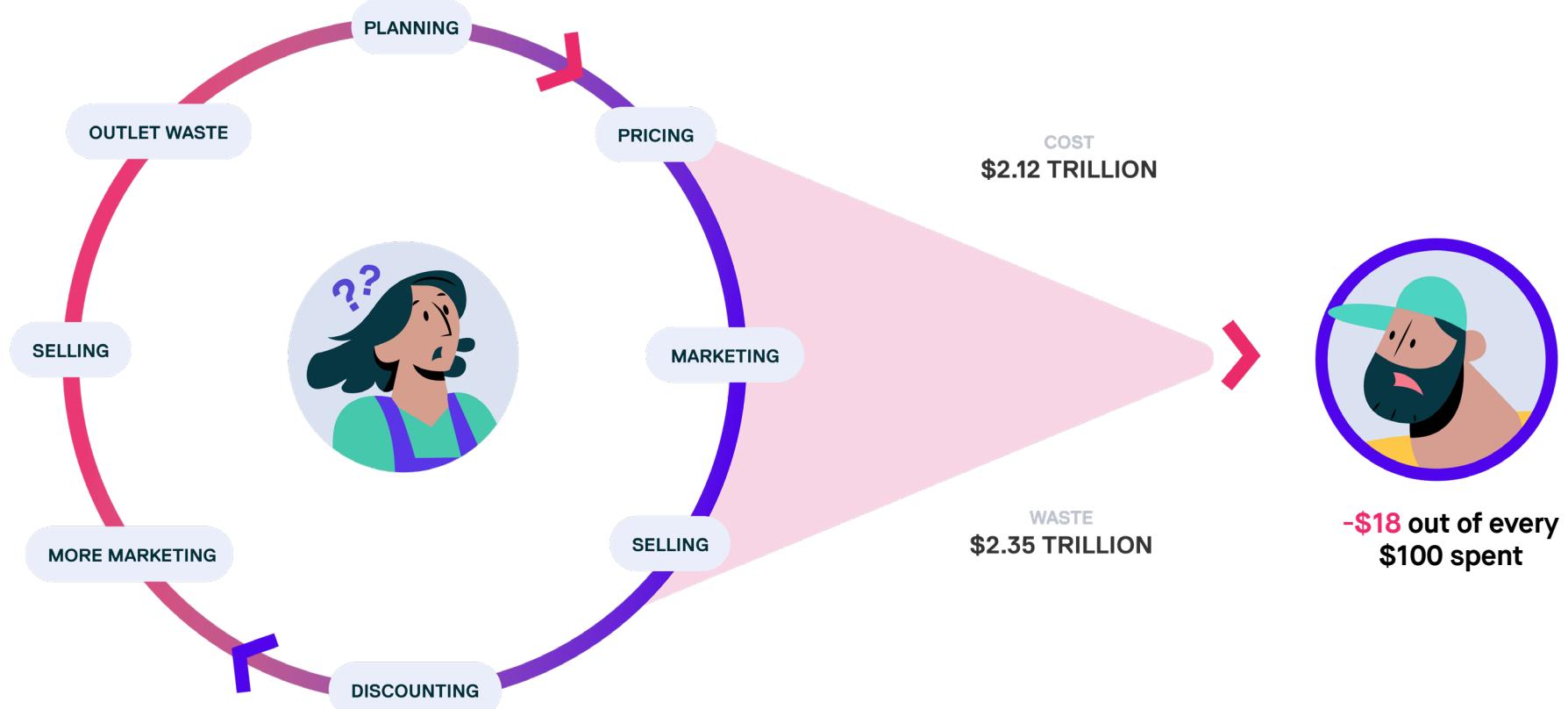
Retail economy loses \$4.5 trillion each year

- \$1 trillion - C2B payment processing⁵
- \$1.1 trillion - media & marketing⁶
- \$2.5 trillion - waste & opportunity cost¹⁴



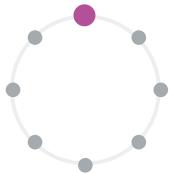
The Vicious Cycle of Uncertainty

Over \$4.5 trillion dollars is extracted out of the retail value chain each year in the form of payment processing fees, upfront marketing spend and waste.



Vicious Cycle: a complex chain of events that reinforce themselves through a feedback loop. Each iteration of the cycle reinforces the previous one. It has detrimental results and continues in the direction of its momentum until an external factor intervenes and breaks the cycle.

A vicious retail life cycle



Planning

Involves the highest degree of uncertainty

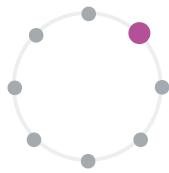
- ⌚ Requires commitment of resources and cash upfront
- ⌚ Access to historical data limited to its own network
- ⌚ Assumptions around economy, consumers, etc.



Selling

Payment fees hemorrhage EBITDA by up to 20%

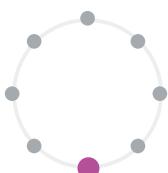
- ⌚ Card transactions cost up to 3% of gross sale
- ⌚ Trillions of dollars locked up in card settlement cycles
- ⌚ Cash comes with logistical challenges around handling
- ⌚ Impossible to measure ROI on marketing dollars spent



Pricing

High margins do not guarantee profitability

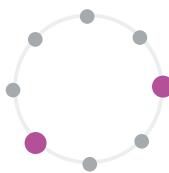
- ⌚ Optimal pricing requires effort and external research
- ⌚ Impossible to measure opportunity cost of uncertainty



Discounting

Reduces profitability and damages brand equity

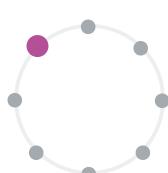
- ⌚ Impacts gross sales negatively
- ⌚ Optimal discounting requires substantial effort
- ⌚ Logistics of re-labeling, signage and menu costs
- ⌚ The opportunity cost of “average discount” mechanism



Marketing

Marketing costs hemorrhage EBITDA by up to 50%

- ⌚ Dollars spent upfront for physical and digital media
- ⌚ Competing for same advertising spots drives costs up, with no incremental benefit
- ⌚ 1% success rate means 99% spam



Outlet Waste

Write offs bring down EBITDA even further

- ⌚ Cost of logistics and shipping to get rid of excess
- ⌚ Impacts gross sales negatively reducing revenue
- ⌚ Total sum of excess are written off as losses

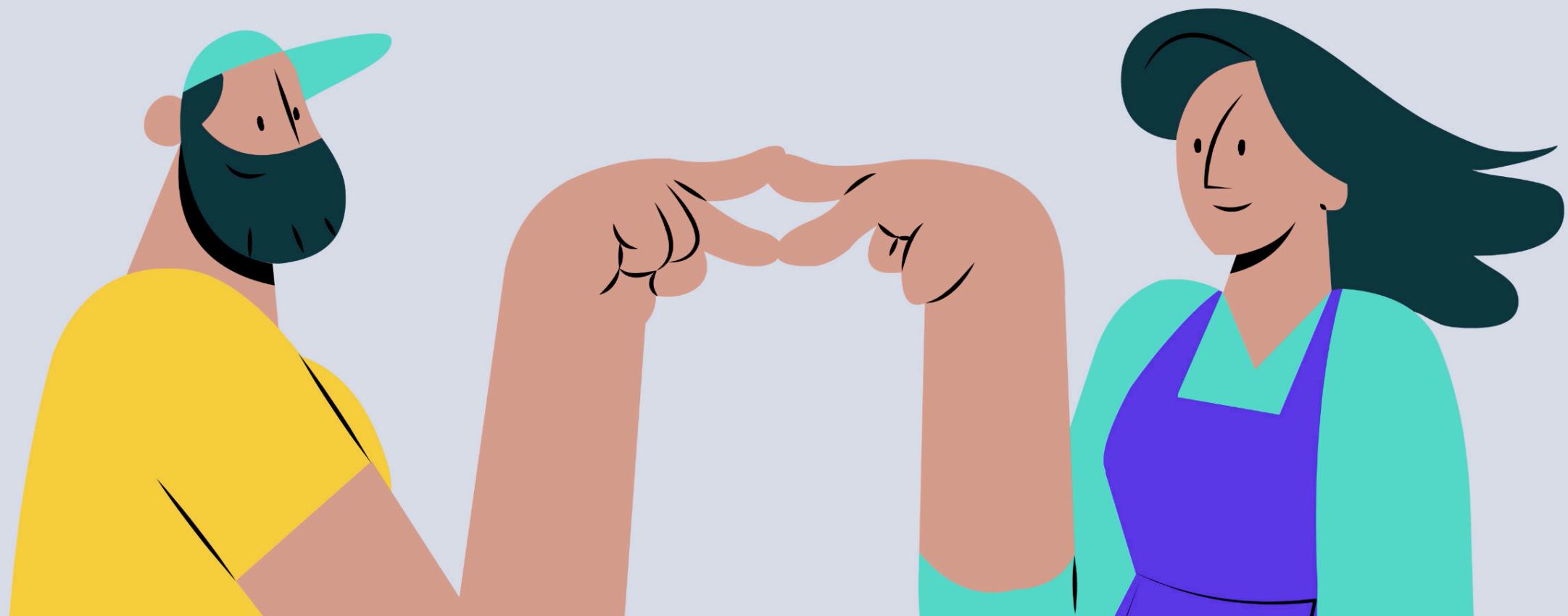
Key:

- ⌚ **Cost:** Stakeholders commit cash and resources up front and are expected to assume all the risk. This risk is ever present and an on-going challenge.

- ⌚ **Waste:** Errors made in a current step generate waste in immediate term and generally make the future steps costlier and more challenging.

The Solution: Alignment of Incentives

The emergence of blockchain technology coupled with the power of the internet and mobile phones enables solving problems previously deemed insuperable. This combination represents the greatest paradigm shift in the history of technology and a unique opportunity to make the future of retail optimally efficient. We created Beam as a global acceptance platform to help the retail value chain take advantage of this opportunity and end the data war.



We created Beam as a global acceptance platform to help the retail value chain take advantage of this opportunity. Beam harnesses the power of the internet, mobile phones and blockchain to help retail value chain stakeholders, their customers and a network of participants come together as a community incentivised with \$4.5 trillion each year to end the data war and displace the tech giants and incumbents in payments.

Ending the data war

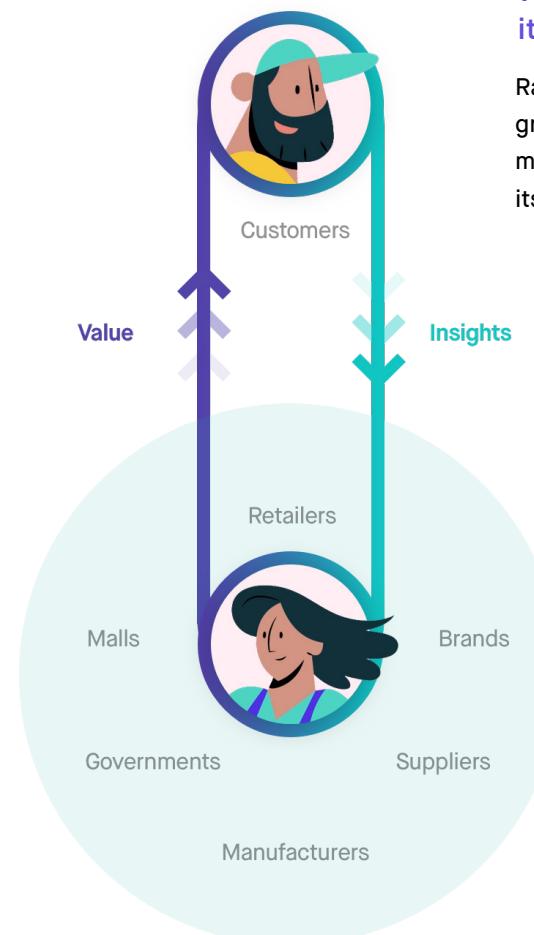
Deciphering customer demand is the key to informing supply. And when it comes to customer needs, there's really only one source of truth - the customers themselves.

Customer behaviour can only be correctly deciphered if customers own their data and are incentivised to share it. The solution is decentralisation: empower customers to own and control their data, and pay them to share it. There are several permissioned blockchain initiatives that address this particular issue. Beam will partner with such initiatives to act as a source as well as a user of purchase history data.

On the flip side, because the customers are now owners of their data and are incentivised to share it, the retail economy prospers.

- What if brands knew exactly what to design and make?
- What if factories knew exactly what and how much to produce?
- What if retailers knew exactly how to optimally price their products and services?
- What if shopping centres knew exactly which brands and retailers should occupy each floor?
- What if each store knew exactly what to stock in their inventory each day, month and season?

- What if all stakeholders of the value chain had a direct line of communication with all their customers?
- What if we told you this system will work just fine without the tech giants and incumbents in payments?



What if we told you it is already?

Rather than wasting 18% of gross sales on payment fees and marketing, the value chain rewards its customers directly.

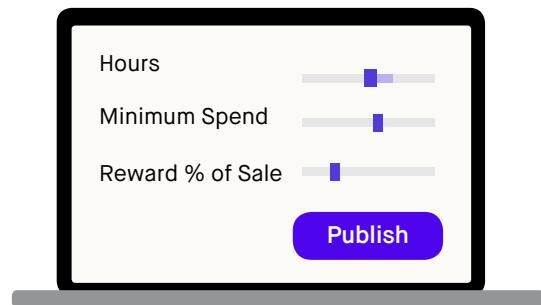
The power of a proven model

Over 5,000 stores on the Beam Network can already answer many of these questions using the insights generated on the Beam Platform. More importantly, they can act on generated insights to achieve desired customer behaviour.

Retailers already use Beam as a demand generation platform to acquire, engage and retain customers, risk-free. A retailer defines a reward for particular desired customer behaviours, and the challenge is encoded in a smart contract. Payment is made only when all of the smart contract's conditions have been fulfilled.

With each Beam transaction, retailers, excluding grocery and fuel, contribute on average, 16% of the sale. The platform then uses 60% of this to drive further engagement and retention of customers in the network. In turn, retailers can use the rich data attached to every transaction to precisely measure their ROI.

Retailers simply set conditions of a smart contract.



Beyond demand generation

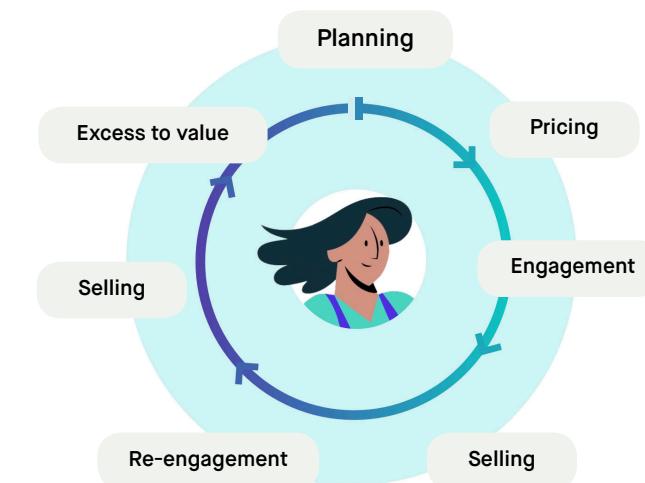
In the near future, we will extend the scope of smart contracts to focus on improving the efficiency of retail beyond demand generation. The objective is to help stakeholders across the retail value chain act on insights generated on the Beam Platform.

Retailers will be able to create smart contracts designed to address both problems and opportunities identified for any given insight by optimising their strategies in areas such as planning, pricing, distribution and inventory management in a quantifiable manner.

Finally, smart contracts will also support incentivisation features designed to provide highly personalised services to customers using deep data analytics, machine learning, and artificial intelligence, as well as visualisation through augmented reality.

Virtuous cycle

Every transaction solves a problem and generates insights to help the value chain optimise planning, pricing, marketing and improve its baseline continuously.



Removing the barriers to entry

We are removing the barriers to entry in payments and offering participants a level playing field. Beam dissuades the use of traditional (card) Issuers and Acquirers—namely banks—and promotes the use of apps and POS systems as the new form of Issuers and Acquirers, respectively.

We empower apps to process transactions on behalf of their users and POS vendors on behalf of their retailers, all without having to invest in PCI compliance, obtain a banking license, integrate with payment acquiring systems, or manage the flow of funds and settlement. Anyone can participate as an Issuer or Acquirer by integrating with the Beam Platform.

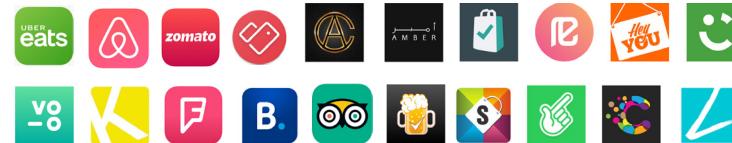
Opening Beam to the world

Using a token economy specifically built for retail, we are opening up Beam's proven smart contracts protocol to the world. Currently, Beam plays the roles of Issuer and Acquirer, along with the Local Partner and a technology provider. Beam's operation in any given city is also responsible for growing the Beam Network as well as providing customer support.

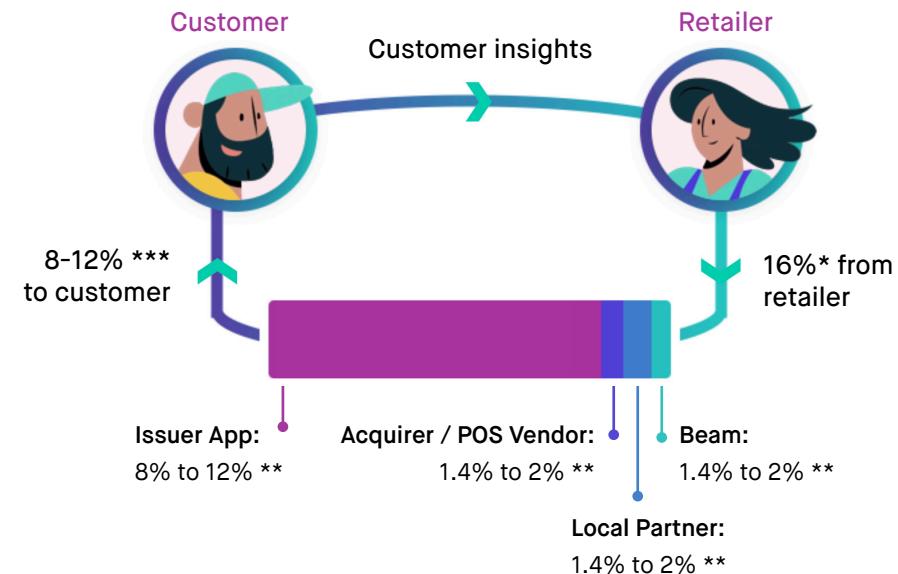
To accelerate Beam's growth worldwide through exponentially increased participation, we are distributing these roles and responsibilities along with the corresponding revenues calculated based on the value the role creates for the retail economy. As a part of this, we are also decentralising all of current and future smart contracts defined on the Beam Platform and publishing them on a public blockchain. Anyone, ranging from individuals to enterprise businesses, can join the network as participants in the capacity of a Local Partner, Issuer Apps and Acquirer to unlock the value attached to these smart contracts.

The identity of retail stakeholders in smart contracts will be protected with the use of random identifiers. As an additional protection mechanism, the smart contracts will also be promoted to Issuer Apps that are within the physical proximity and distance of stores.

\$4.5 trillion reward economy for participants to unlock



All of the revenues generated on the platform will be distributed between the participants on the Beam Network as per the diagram below. This split is based on four years of concrete experimentation that optimally grows the network as a whole.



* On average, retailers on Beam currently contribute 16% of gross sale as rewards whenever a smart contract is unlocked. Based on our expert research this will increase up to 25% as other stakeholders of the retail value chain such as brands, malls and municipalities begin contributing to the network in order to drive customer behaviour they wish to see.

** The actual % of revenue earned is calculated using the level of BEAM tokens the participant is holding at the time of transaction. See Token Economics for more detail.

*** Customers use the apps that gives them the most rewards, monetary or intrinsic value.

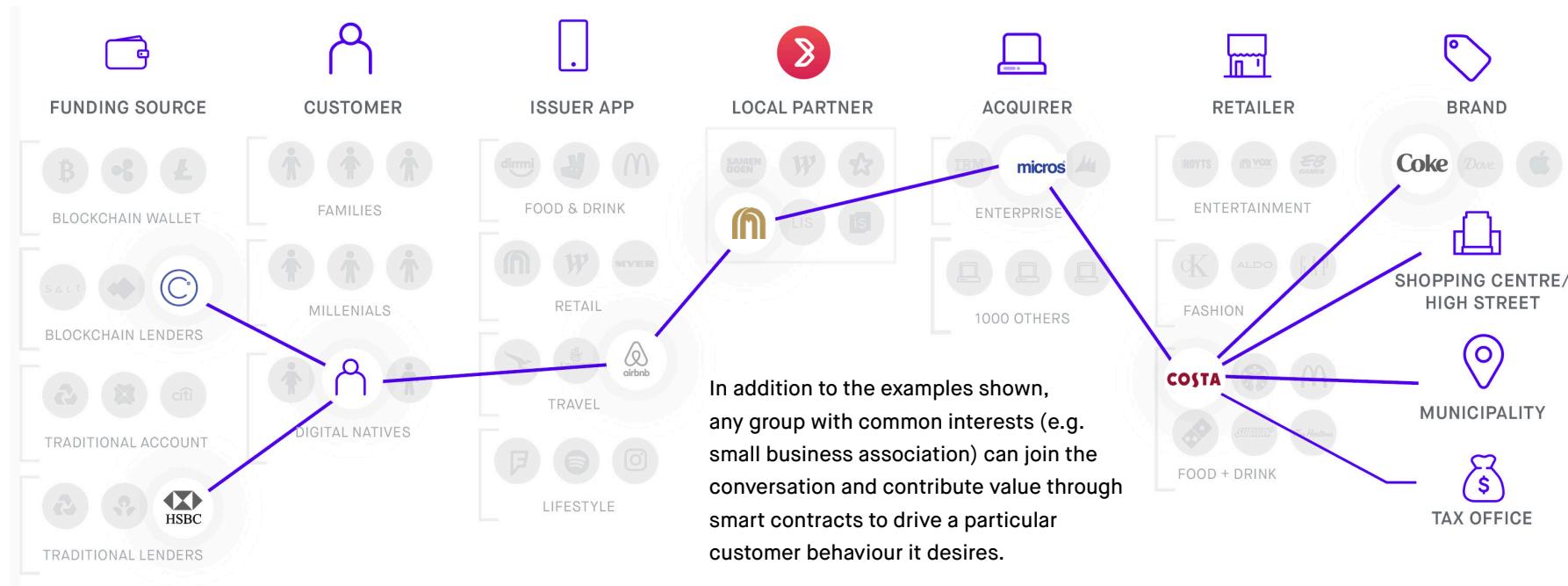
The Beam Platform

Payment as conversation

A payment on Beam is not a one-way transaction, but rather a multi-party smart conversation between all stakeholders including brands, distributors, shopping centres, funding sources, retailers, municipalities, and even the tax authorities.

Every Beam payment conversation captures all possible data points in a standard format. Each party owns the data their participation generates. On the Beam Platform, parties can exchange data for value in the form of rewards and benefits. Each party gains access to insights and benefits that were never possible before, with zero effort and cost.

For the first time in history, all relevant stakeholders can engage in a direct conversation with their customers.

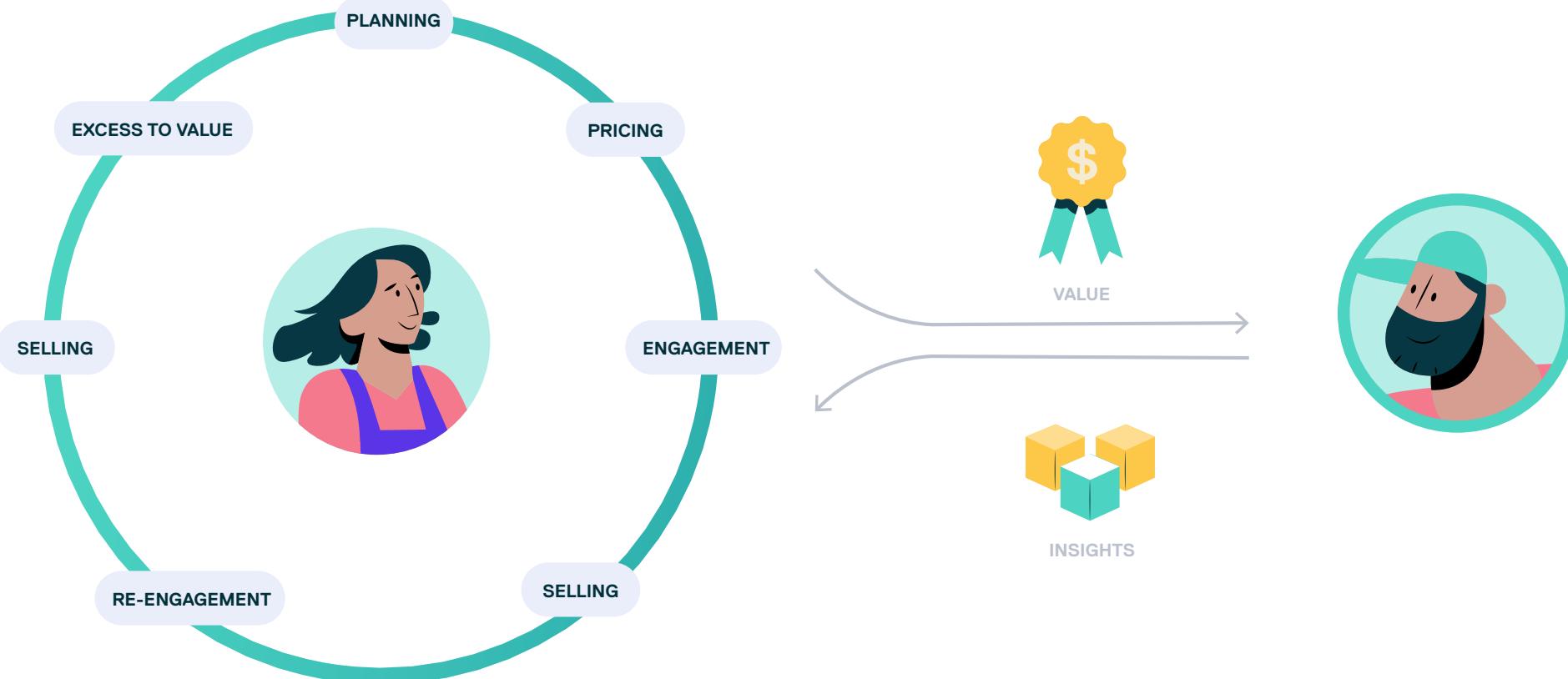


This model provides the visibility and the effective channels of engagement the retail value chain lacks today. It also maximises customer benefits, improves stakeholder profitability and creates an infinite number of economic opportunities for service providers such as Issuer Apps, Acquirers, and Lenders, whether blockchain-based or traditional.

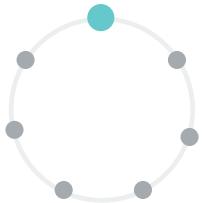
Using the data captured in payment conversations, service providers are incentivised to act on insights helping enterprise brands and distributors ranging from Coca-Cola to Unilever, as well as small boutique manufacturers, to make better decisions.

The Virtuous Cycle

Rather than spending trillions on payment processing fees, media buying and marketing, the retail value chain rewards its customers directly for their data. Every interaction with customers generates insights driving better decisions and further reducing waste.



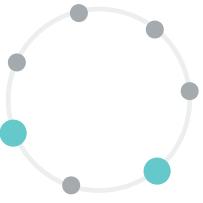
A virtuous retail life cycle



Planning

Every new cycle improves visibility

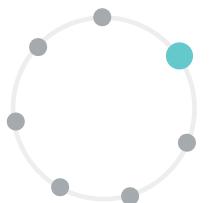
- [\$] Cash spent is either recovered or retained
- [\$] Ability to test strategies in pilot locations
- [cube] Access to ecosystem level category data
- [cube] 3rd party simulations with ease



Selling

Cost free real time settlements

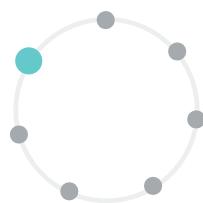
- [\$] Zero settlement fees
- [\$] Incrementally growing economy
- [cube] Positive feedback loop
- [cube] Geo and category level benchmarking
- [cube] Brand, store or product root cause analysis



Pricing

Data driven approach for optimal margins

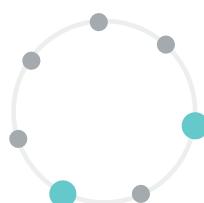
- [\$] Ecosystem level data driven pricing strategy
- [\$] Ability to test strategies in pilot locations
- [cube] Measure the opportunity cost of price points



Excess to Value

Reduces profitability and damages brand equity

- [\$] Book higher revenue
- [\$] Return higher rewards for customers
- [cube] Get additional audience level insights



Engagement and Re-engagement

Risk free and cost-neutral

- [\$] Define desired behaviour and rewards
- [\$] Minimum effort, maximum exposure
- [\$] Zero dollars upfront & 100% success rate
- [cube] Simulate objectives with real data
- [cube] Personalised, contextual, zero spam
- [cube] Real time measurement and monitoring

Key

- [\$] Value: Costs and waste that turn into incremental value for all stakeholders of the retail ecosystem
- [cube] Insight: Exchange or use of data for improved visibility helping stakeholders make better decisions

Payments processing

Payment conversations on the Beam Platform act as the main enabler of all of the features listed below.

Feature	Description	Benefit	Status	Stats
Pay with any funding source	<ul style="list-style-type: none">Beam is agnostic to funding sourcesBlockchain-based* or traditional funding source such as a credit card or cash deposits at merchants is supported	<ul style="list-style-type: none">Retailers, Issuer Apps or Acquirers do not have to deal with PCI or fiat regulationsCryptocurrencies bring additional spend into the retail economy	LIVE	\$250+ million processed
Positive feedback loop	<ul style="list-style-type: none">Customers rate their experience after every transaction (satisfaction and NPS)	<ul style="list-style-type: none">Ability to plot customers in terms of their relative value to stakeholdersAbility to identify challenges and opportunities in real time	LIVE	243,131 satisfaction and NPS surveys completed
Zero payment fees**	<ul style="list-style-type: none">All transactions are free of payment processing fees**	<ul style="list-style-type: none">Improves merchant's profitability	LIVE	\$3.7m payment fees saved
Real time settlement	<ul style="list-style-type: none">Settle all transactions in under five seconds	<ul style="list-style-type: none">Merchants receive funds instantly	Q1 2019	
Zero exchange fees	<ul style="list-style-type: none">Convert any currency to any other on the Beam Platform free of charge	<ul style="list-style-type: none">Customers can spend their foreign currencies in any city without paying exchange feesCustomers can send funds to each other without exchange fees***Merchants can receive foreign currencies without exchange fees	Q1 2019	

* Support for cryptocurrency wallets is planned for launch in Q4 of 2018.

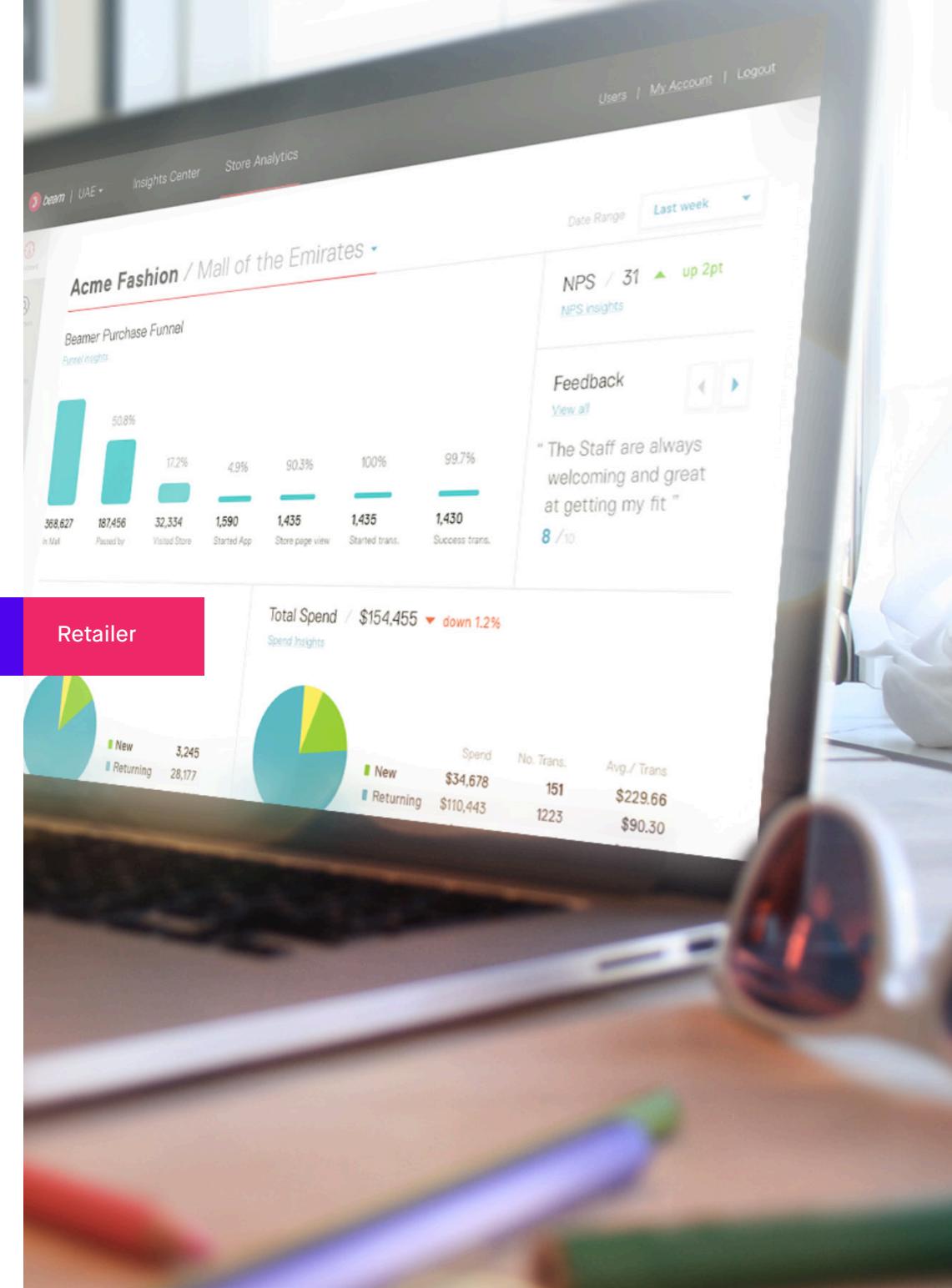
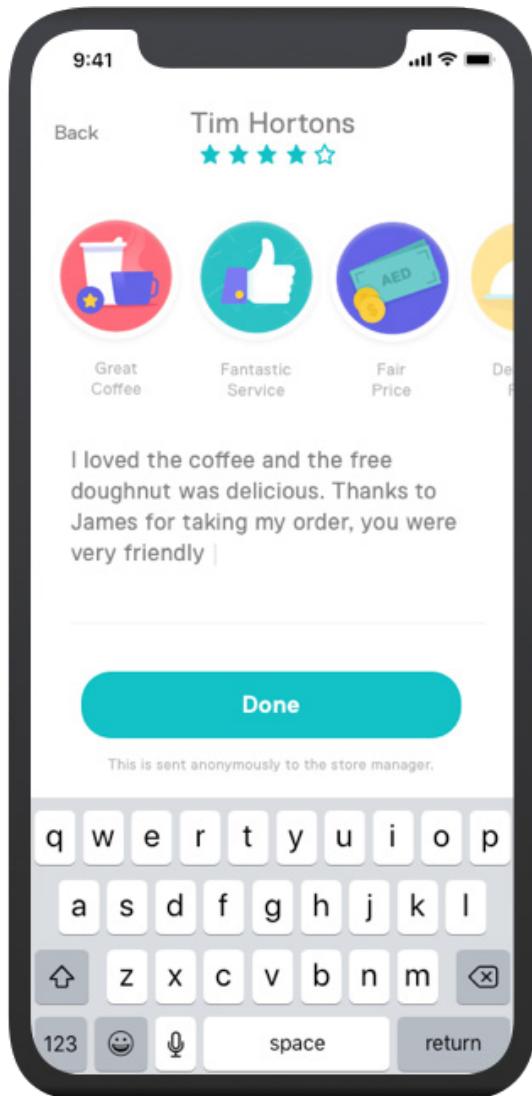
** Payment processing fees is displaced with a minimum of 2% reward contribution, which is passed on to the customer.

*** In the short term, users will be able to send funds to each other within the limits of gift cards (actual amount depends on the region). In the long term, Beam will get the necessary e-money licenses to enable peer-to-peer international funds transfers.

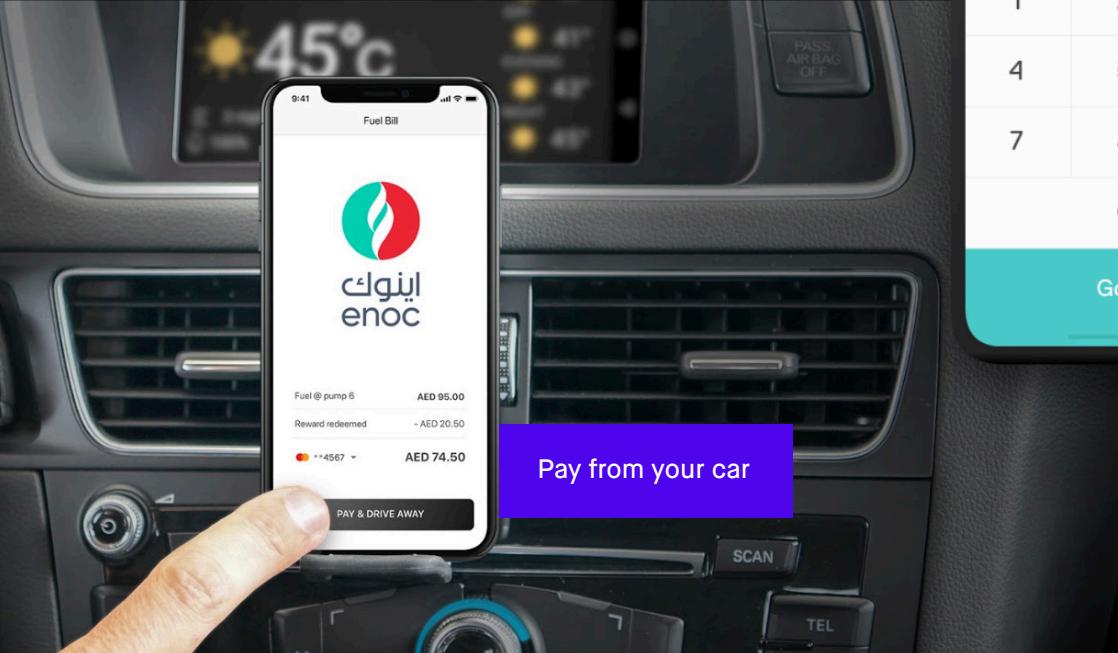
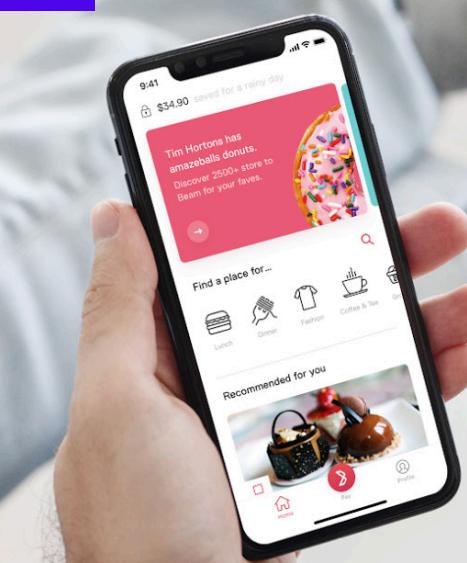
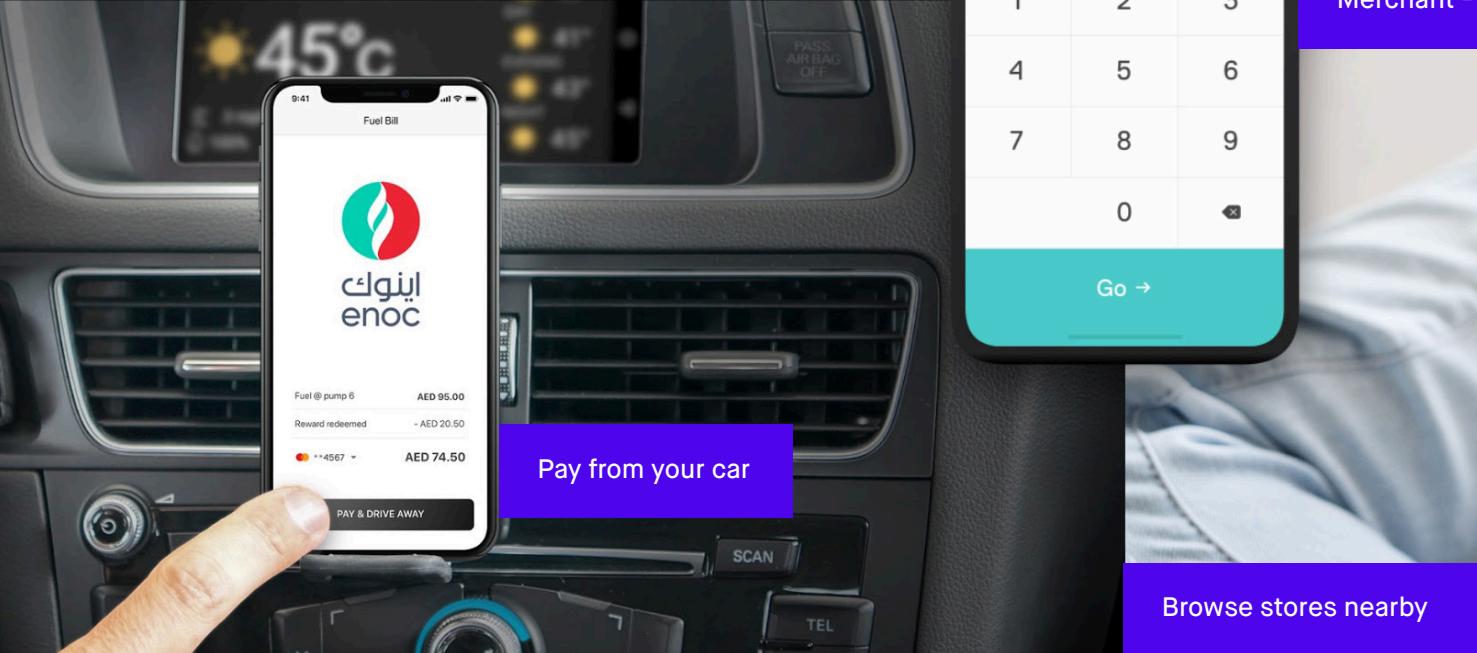
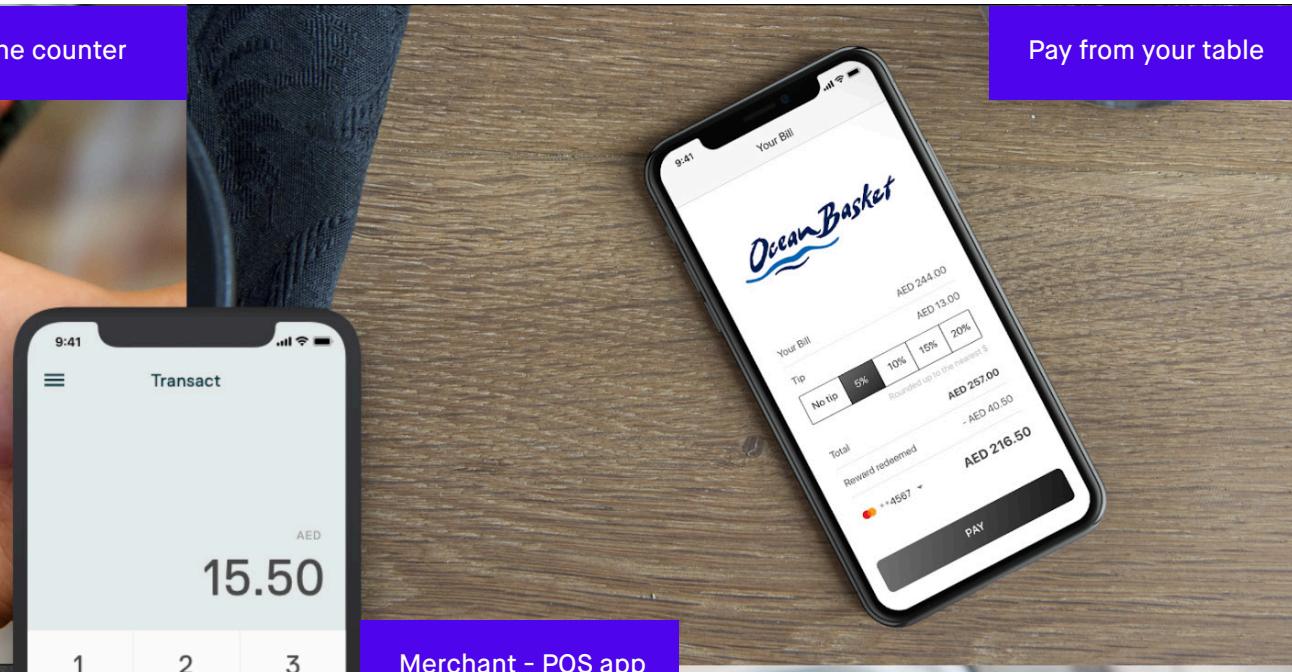
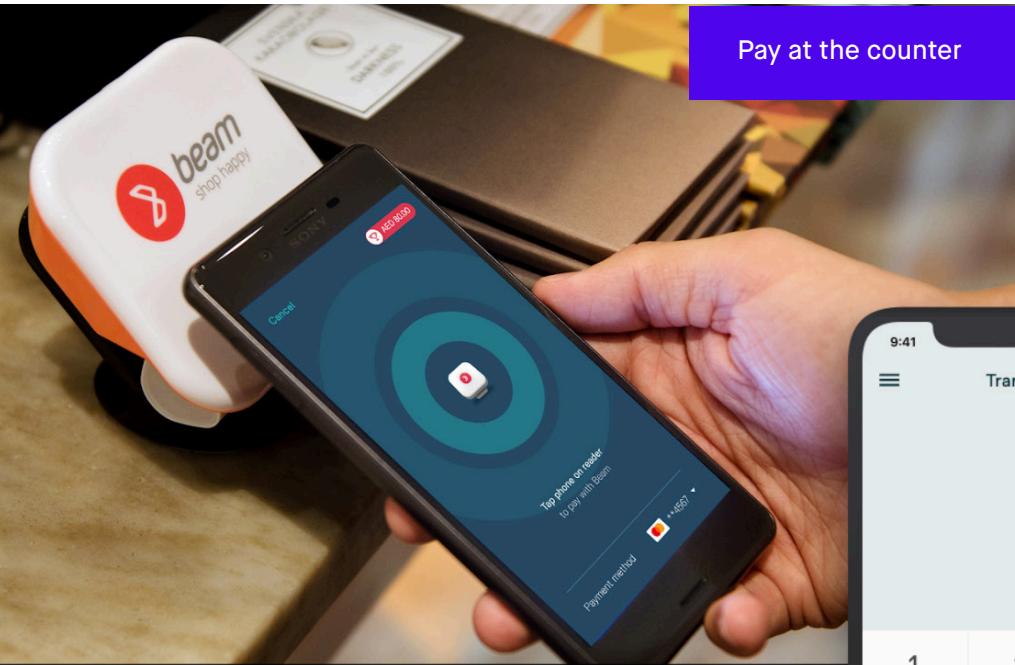
Demand generation

Feature	Description	Benefit	Status	Stats
Smart contracts	<ul style="list-style-type: none"> Stakeholders define programmatic objectives (e.g. acquire new customers) and set budgets Risk of objective not being met is distributed amongst the service providers (e.g. Issuer App) 	<ul style="list-style-type: none"> Zero upfront marketing spend Stakeholders pay nothing unless the programmatic objective is met Issuer Apps and Customers earn rewards every time stakeholders' objectives are met 	LIVE	4.3 million smart contracts executed
Relevancy index	<ul style="list-style-type: none"> Reflects the quality of relationships between all stakeholders, their products and services, and their customers, in real time 	<ul style="list-style-type: none"> Reduces spam for customers Increases effectiveness of stakeholders' communication with their customers 	LIVE	5,000 + stores 750,000 users
Real time response	<ul style="list-style-type: none"> Every conversation is instantly available to measure live on the platform This is done for the effectiveness of any given programmatic objective 	<ul style="list-style-type: none"> Stakeholders can test different strategies and pivot or fine-tune strategies in real time 	LIVE	2,994 smart contracts live
Measure ROI on traditional ads.	<ul style="list-style-type: none"> Close the loop on advertising by linking them to transactions where possible 	<ul style="list-style-type: none"> Stakeholders can measure ROI on ad spend 	LIVE	243,374 promo codes redeemed

Real time insights



Beam Wallet experiences



Upcoming features

The upcoming features of the Beam Platform will focus on further personalisation and optimisation as well as social impact projects.

Personalisation and optimisation

We are creating incentive models that attract participants specialising in personalisation and value chain optimisation through machine learning, data analysis, AI, visualisation and augmented reality.

For example, a participant specialising in personalisation can work with a visualisation company to provide customers with a way to visualise their next home with all the furniture and accessories in place before they move in. Alternatively, customers can visualise particular fashion styles to wear at an event before attending it. Any activity that assists the customers with making informed decisions about their purchases ultimately helps the retail value chain sell a product or service in a more efficient manner. Participants that help create these efficiencies are then rewarded as per the terms of the smart contracts they have unlocked.

These features will be designed to provide customers with personalised shopper or concierge apps. At the same time, a boutique fashion store, with the help of specialists participant will be able to compete with mainstream brands on equal footing by better managing their planning, pricing and inventory adapted to the needs of the town the store is in.

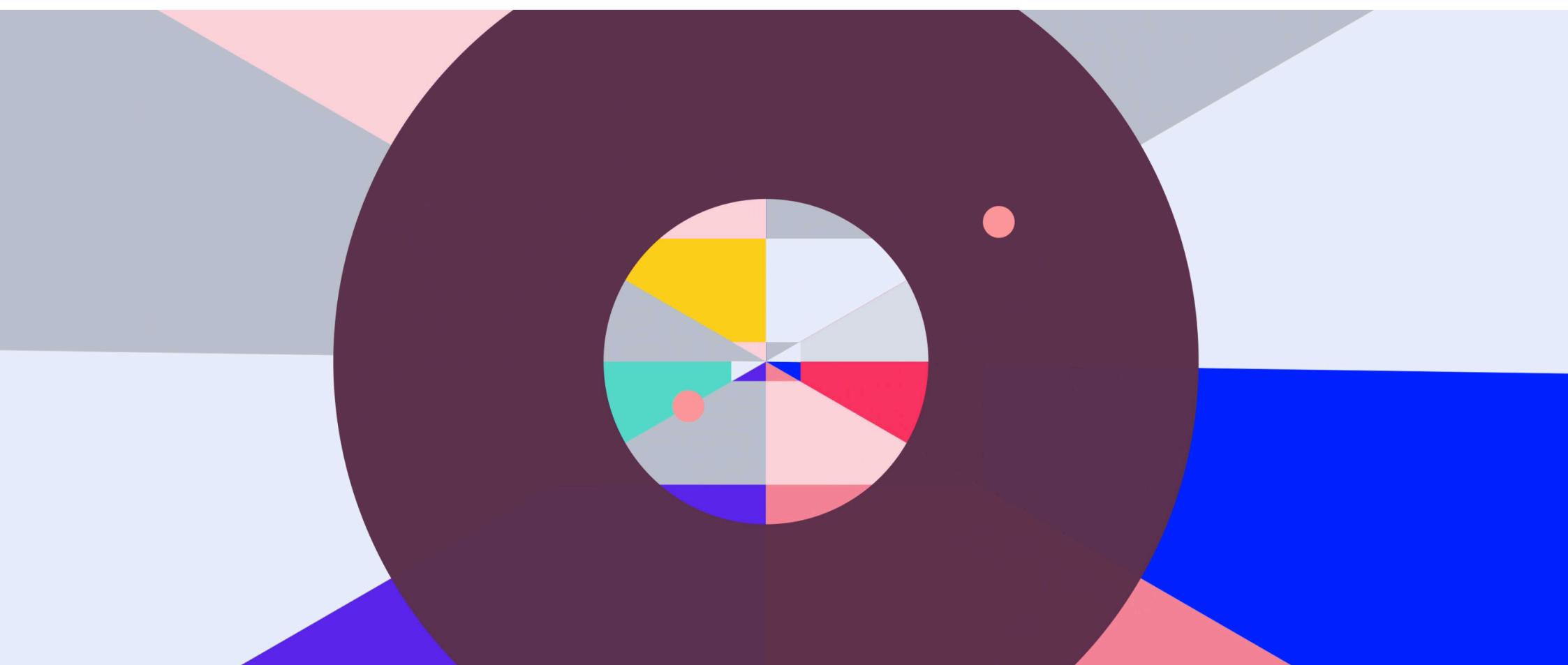
Social impact projects

Qoin, a Dutch company based in Amsterdam has chosen to use the Beam Platform to help municipalities in the Netherlands and Portugal with social impact projects. Qoin specialises in local community currency designs and develops programmes for municipalities to build resilient cities through stronger communities. They have successfully designed and executed social impact programmes at scale. To name a few, these programmes have reduced unemployment with the use of volunteers and helped communities manage waste more efficiently.

Qoin will use the Beam Platform as its interface to issue local community currencies that are earned by completing positive social activities in their locality. The local currencies can only be spent in the towns they are earned in. This is specifically designed to help improve the economy of local towns. These local currencies can be designed so they are restricted for spending in the towns they are issued in.

Token Economics

The economics of BEAM tokens have been designed specifically for the retail value chain. Taking into account the needs, strengths and weaknesses of all its stakeholders and customers, the economics of BEAM tokens combine decades of hands-on experience, real life implementations of local community currencies, Qoin's knowledge and expertise on currency design and local economies and our accumulated learning since 2011.



BEAM tokens

BEAM is a utility token to incentivise usage of the Beam Platform and a currency to grow its acceptance network. Importantly, it also ensures participants who help scale the Beam Platform globally are appropriately incentivised in the short term and compensated in the long term.

In the short term, the utility value of BEAM tokens is intended for ICO Participants, Local Partners, Retailers, Acquirers and Issuers. In the longer term, other participants such as Lenders, Big Data and AI companies etc. may also be required to hold BEAM tokens in order to provide revenue generating services to the Beam Network.

Use of BEAM for Network Participants

A Local Partner needs to hold BEAM tokens in order to operate Beam in its region. How many BEAM tokens a Local Partner needs to hold is calculated using a formula that takes into account the regional gross domestic production and the population size of its locality.

$$[\text{Local-Partner-Minimum-BEAM-Requirement}] = [\text{Regional Income}] / [\text{Local-Partners Holding Rate}]$$

BEAM tokens held by a Local Partner in addition to the minimum requirement can be used to unlock additional revenue. Similarly, Acquirers and Issuers may hold additional BEAM tokens to increase their revenue.

For example, a service provider joined the platform 12 months ago. Since then, they generated \$100,000 gross revenue and held an average of \$20,000 of this revenue in BEAM tokens. When processing their next transaction, this service provider will earn 20% additional revenue.

In order to unlock the additional revenue, a participant may buy or borrow BEAM tokens, and participants with excess BEAM tokens (more than required to unlock additional revenue) can lend their BEAM tokens to other participants.

Use of BEAM for ICO Participants

The utility value of BEAM tokens for ICO Participants is to lend their BEAM tokens to other participants on the Beam Platform who are either required to hold BEAM tokens to provide revenue generating services, or wish to unlock additional revenue.

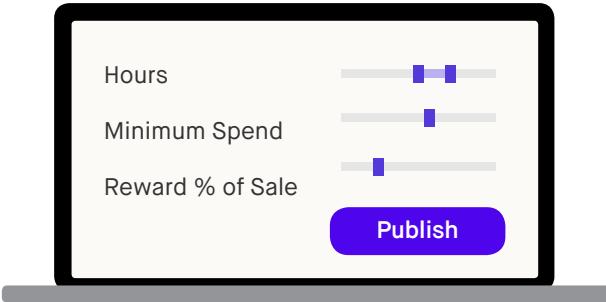
Local Partners, Acquirers and Issuers are also incentivised to hold BEAM tokens to provide services and generate revenue on the platform. However, depending on the price of BEAM tokens and/or other internal reasons, a participant may choose to borrow rather than buy BEAM tokens. The tokens can be borrowed from any BEAM token holder.

A demand generation example supported on the Beam Platform today

A merchant wishes to fill its unutilised capacity. This example may be applied equally to a cinema or a fine dining restaurant.

The parameters of the challenge are:

- Smart contract conditions:
 - Generate a sale between 2pm and 6pm from Monday to Thursday
 - The customer must spend at least \$20
- Reward value: 30% of the sale



All apps that help the retailer fill its unutilised capacity automatically earn BEAM tokens as per the terms of the smart contract it is attached to.

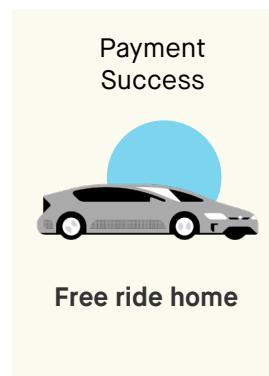
Participants then pass on the value they unlock to their users in a format relevant to them.

For example:

Pokemon Go unlocks new catches for customers who go to the cinema



Airbnb offers a free Uber ride home to customers who go to a fine dining restaurant



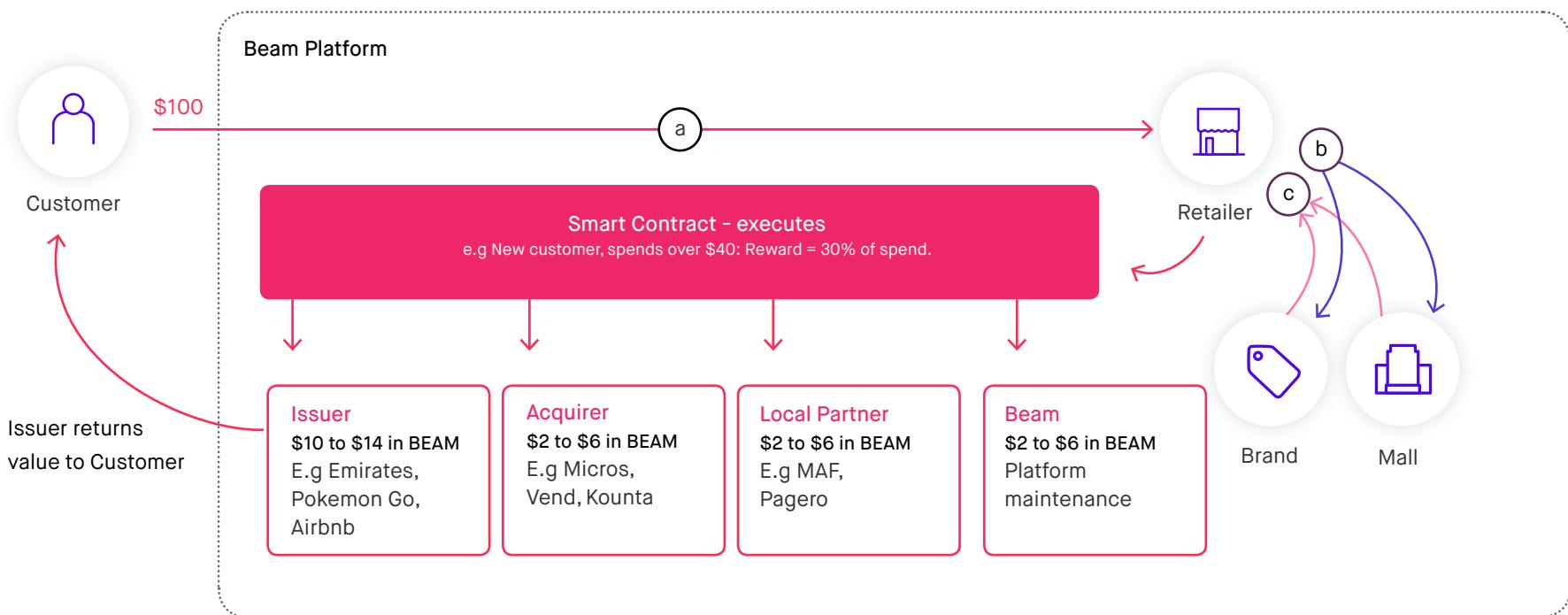
Emirates offers its customers bonus points to go to the cinema.



Earning BEAM

As per the example above, this diagram shows how participants on the Beam Platform earn BEAM tokens.

- (a) Customer pays in retailer
- (b) Retailers can pay for inventory and rent in BEAM
- (c) A Brand, Mall and any other stakeholder of the retail value chain can use BEAM to engage its customers by defining the behaviour it wishes to drive and encode the conditions for it into a smart contract.



Benefits of BEAM token

Every transaction on the Beam Platform benefits all of its participants.

Retail value chain stakeholders:

- Achieve the desired behaviour encoded in smart contracts.
- Receive additional insights from transactions, reinforcing a positive feedback loop.
- Pay reward contribution only when all of the conditions of smart contracts are met.

Network participants:

- Unlock the value attached to the smart contract of a given challenge.
- Issuers unlock up to 70% of all revenue generated on the Beam Platform and Acquirers and Local Partners up to 20% each. See “Opening Beam to the world” under “Alignment of Incentives”.
- A participant can generate up to 40% more revenue by holding a portion of its prior revenue in BEAM tokens. See “Use of BEAM for Network Participants” under “Token Economics”.

Customers:

- Earn monetary or intrinsic value from every transaction: for example, a game app may reward its user with a new level; Uber may offer a free ride, while Foursquare simply rewards the user with monetary value.
- Customers choose the apps they wish to use based on the value they get from it.

Token holders:

- The BEAM token economy is designed so that every transaction on the Beam Platform results in network participants automatically purchasing BEAM tokens at market prices.
- Demand and liquidity for BEAM tokens increase with every new transaction and as more transactions are processed on the network its value will also appreciate.
- The value of a BEAM token is linked to the total throughput of transactions processed on the network.

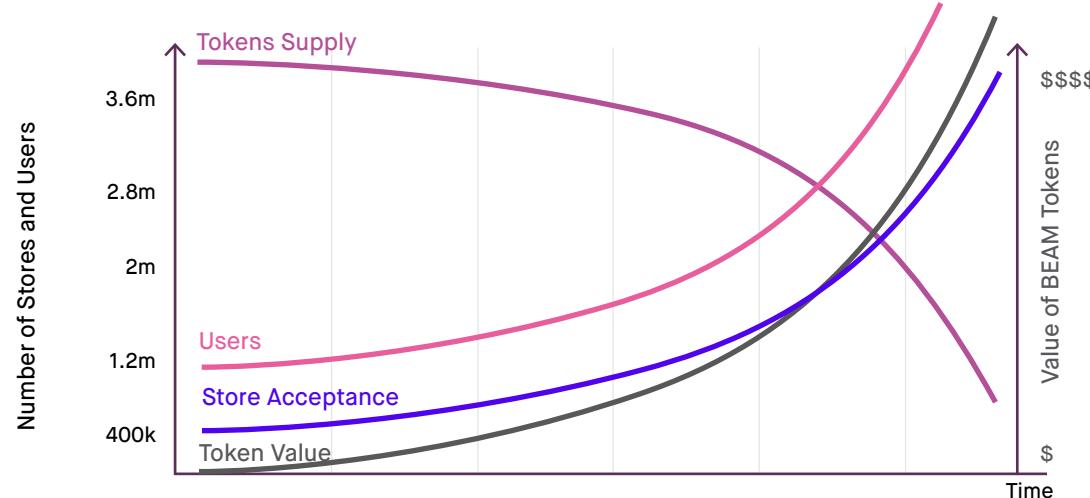
Incentivising network growth

BEAM token's primary purpose is to incentivise network growth through appreciation of its value.

All else being equal, the value of BEAM tokens is designed to appreciate through the following mechanisms:

- As a direct result of a Local Partner's requirement to hold tokens, supply of BEAM tokens in circulation will continuously reduce as more Local Partners launch Beam in more cities and countries.
- Increasing the size of the acceptance network using the Network Development Fund. In addition, this will naturally attract more users to the platform, increasing the number of transactions processed on the network.
- Every transaction on the platform results in participants automatically buying BEAM tokens from the market with the revenues they generate for their services on the network. In addition to the value of tokens, this improves the liquidity of BEAM tokens through constantly increasing demand.

Whilst each of these mechanisms operates independently, collectively they are designed to be synergetic, each amplifying the effect of the others.

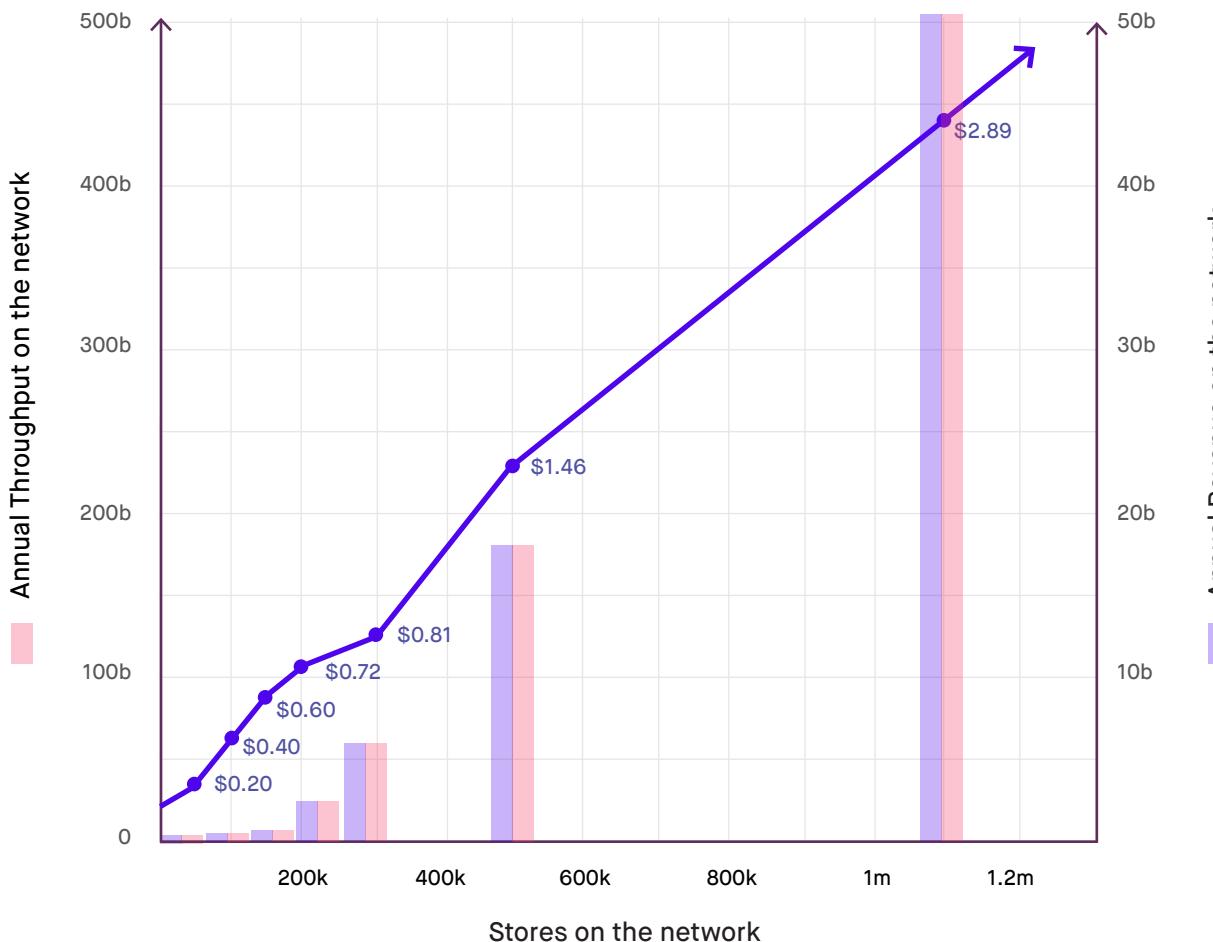


Country	Status	GDP (\$b)	Ratio	# of Tokens to HOLD	\$ Value Today
Australia	Assigned	1,500 b	2.22%	133,348,187	\$1,333,482
New Zealand	Assigned	220 b	0.33%	19,633,325	\$196,333
Netherlands	Assigned	945 b	1.40%	84,024,087	\$840,241
Portugal	Assigned	249 b	0.37%	22,122,333	\$221,223
Russia	in Discussion	1,299 b	1.92%	115,459,825	\$1,154,598
Turkey	in Discussion	909 b	1.35%	80,873,874	\$808,739

As the Beam's acceptance network and throughput grows, the value of BEAM tokens will also grow. The chart to the right shows the forecasted value of BEAM tokens relative to the size of the network. Calculations used in this chart are based on Beam's actual historic data generated between 2013 and 2018 that takes into account the current size of the network and \$250m throughput processed on the network.

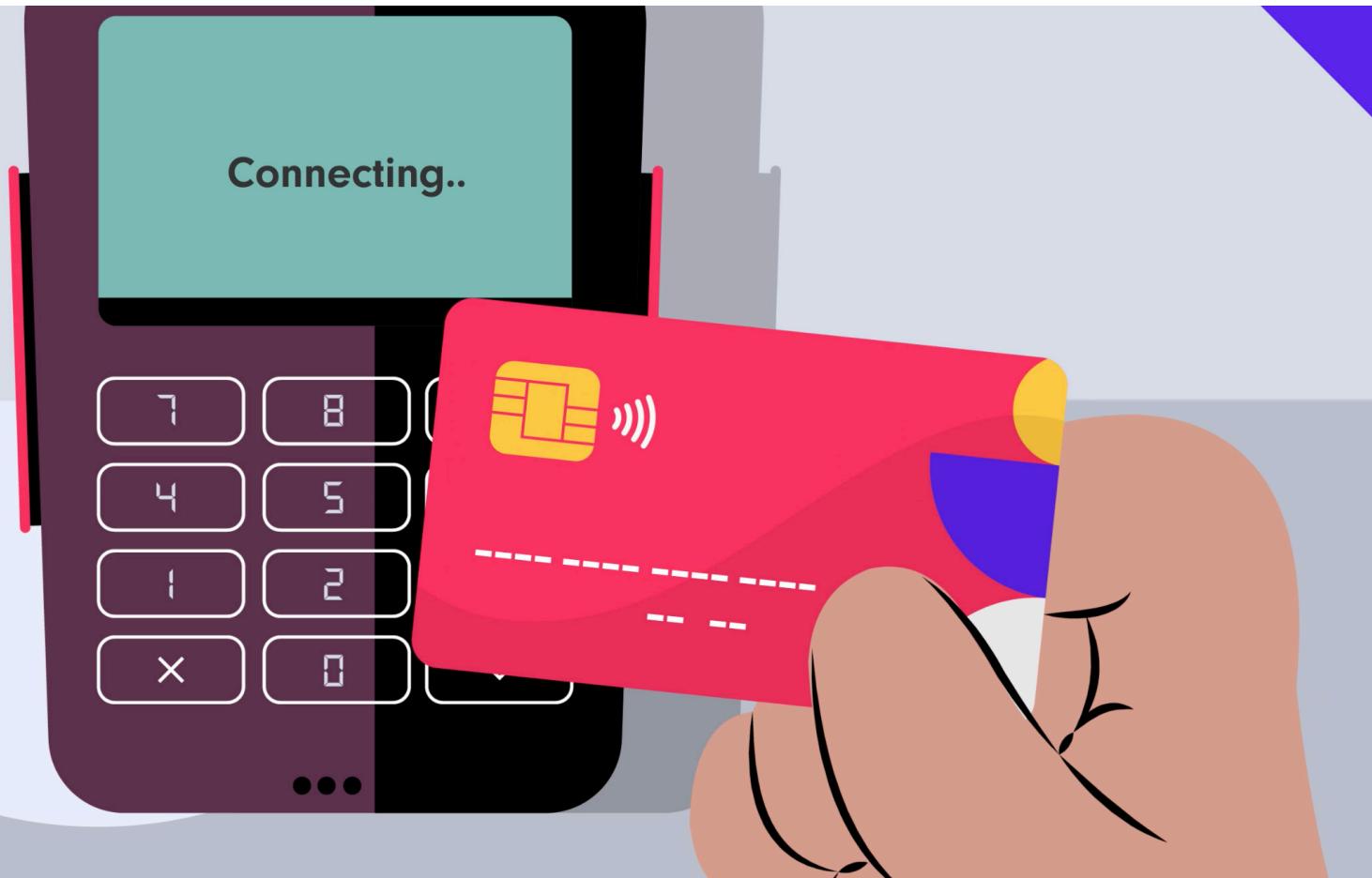
By design, as the value of BEAM tokens appreciate, the number of tokens an existing Local Partner is required to hold for its region will be reduced overtime. This is done to incentivise existing token holders to free up tokens from 'holding pool' making way for new regions joining the network.

To launch Beam in new regions, new Local Partners can either buy or borrow tokens from existing token holders. This is a built in early adopter bias incentive mechanism for Network and ICO participants as well as Local Partners that help scale Beam's acceptance network globally.



Key Market Competitors

Beam's primary and direct competitors are the current card-based acceptance networks such as Scheme Debit.

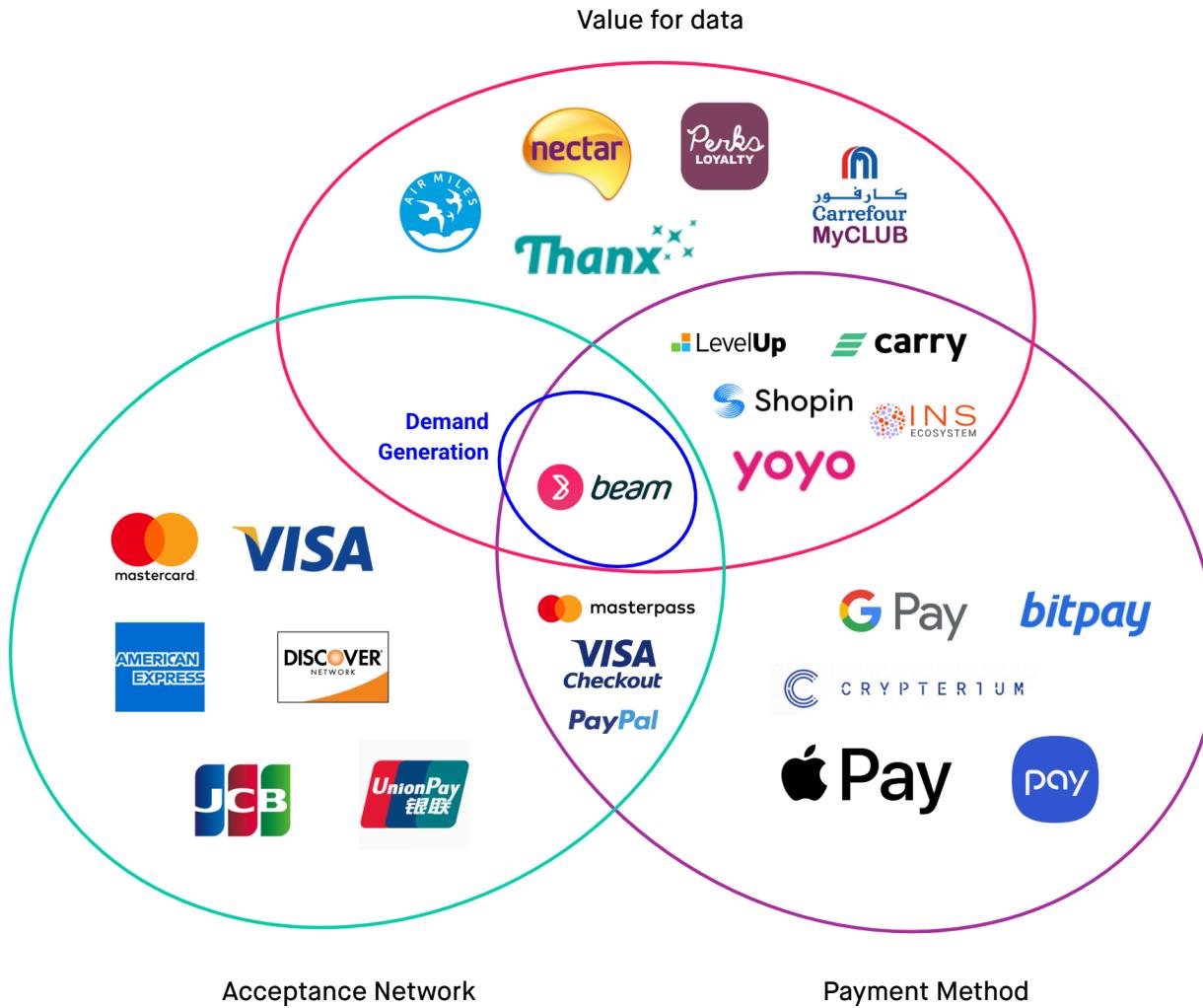


Market positioning

With built-in support for smart contracts, Beam enables all stakeholders in the entire retail value chain to exchange data for value without having to invest in a proprietary loyalty solution or spend any money upfront. And since multiple network participants are competing to unlock the value attached to smart contracts, the stakeholders will always get the best possible outcome in terms of effectiveness and cost efficiency.

In addition, the added benefit of Beam as a payment method enables retail customers to earn and burn their rewards automatically as well as pay the balance of the transaction with another funding source in a single step. Finally, Beam is a payments acceptance platform, all existing apps acting as Issuers and POS vendors as Acquirers are incentivised to process transactions on the network.

The incentives attached to smart contracts on the Beam Network provide all participants with additional revenue streams and will therefore exponentially increase participation and adoption of the platform globally. None of the participants on the network are required to get banking licenses or deal with settlements and proprietary point-to-point integrations. A single integration with the Beam Platform takes care of all integrations, flow of funds and settlements between all parties on the network.



Value for data



Common Considerations

Solution live at scale				
Retailer not required to be crypto literate				
Decentralised revenue distribution model *				

Value for Customers

Earn rewards on every transaction				
Burn (redeem) rewards anywhere on the network				
Data ownership & control				
Recommendation & personalisation				

Value for Retailers

Risk free demand generation with smart contracts				
Rich insights (store visits, conversions, segmentation etc.)				
Virtuous cycle - revenue return to retail economy				

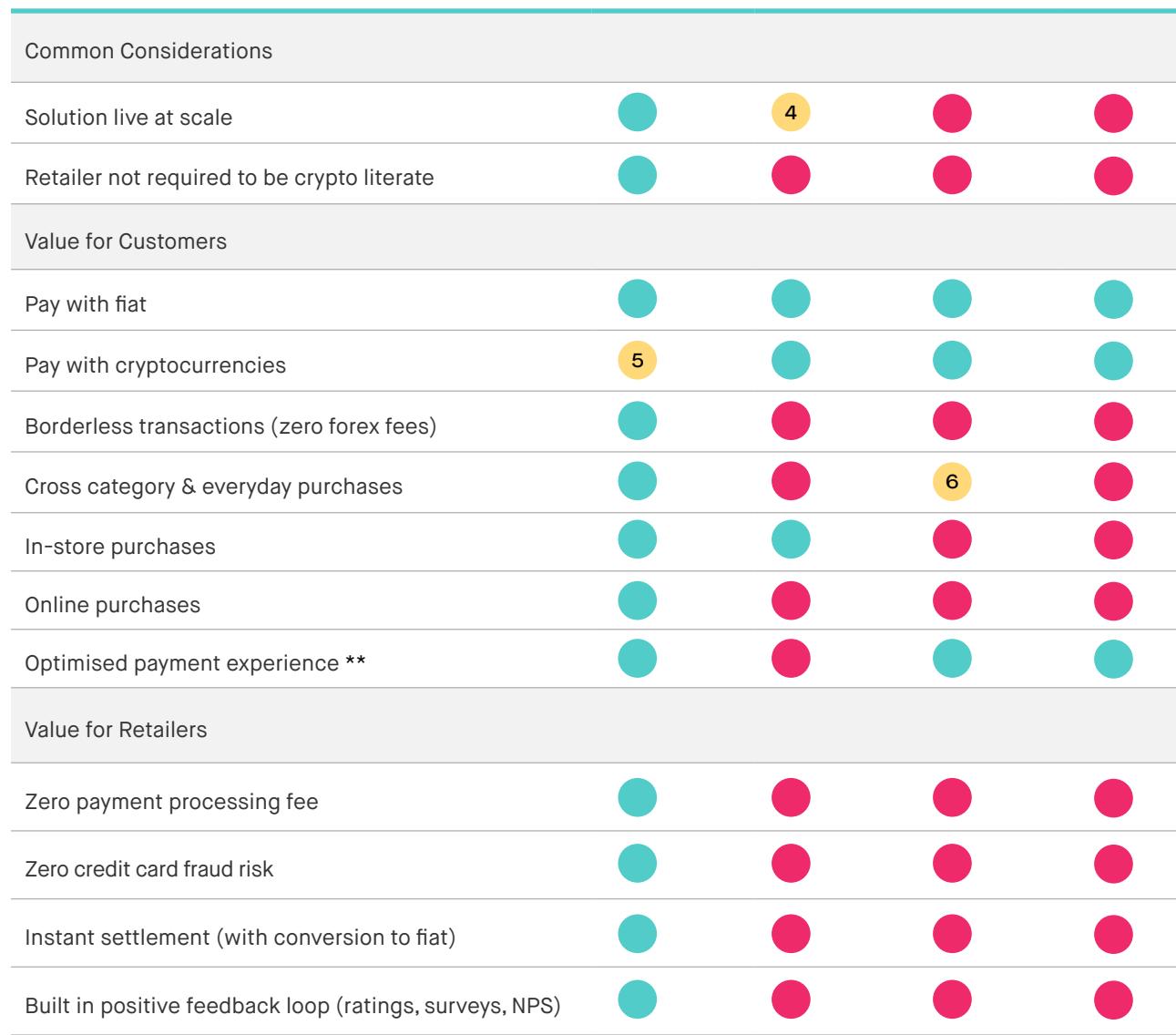
1 Carry isn't currently live, however, it is partnering with an existing popular loyalty program in South Korea.

2 Customers earn rewards from those stores that purchased Carry tokens.

3 Customers rely on a single solution provider to develop the recommendation and personalisation algorithms. On the Beam platform, all participants on the network are incentivised to develop the best algorithms, which is naturally selected by way of competition.

* Up to 70% of all reward contributions the stakeholders of the retail value chain make are designed to come back into the retail economy creating a multiplier effect overtime.

Payment methods



4 Carry isn't currently live, however, it is partnering with an existing popular loyalty program in South Korea.

5 Beam is running a closed beta testing to top up account with crypto and pay anywhere on the network.

6 INS focuses on direct to consumer grocery purchases.

** Payment experiences on Beam are optimised based on the environment the user is in at the point of transaction. Beam supports "tap & go" at supermarkets, fetch amount and pay from car at fuel stations, splitting bills and tipping staff at restaurants, push and pull utility bill payments and subscriptions etc.

Acceptance platforms



Card Networks

Value for network participants

Level playing field (anyone can become Issuer or Acquirer)



Banking / e-Money licence not required



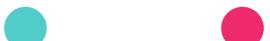
PCI Compliance not required (no need to handle card data)



Zero cost to become Issuer or Acquirer



Substantial revenue stream (from merchant smart contracts)



Hands free settlement flow (automatic and instant)



Incentivised to join (Acquirers and stores are rewarded for each store)

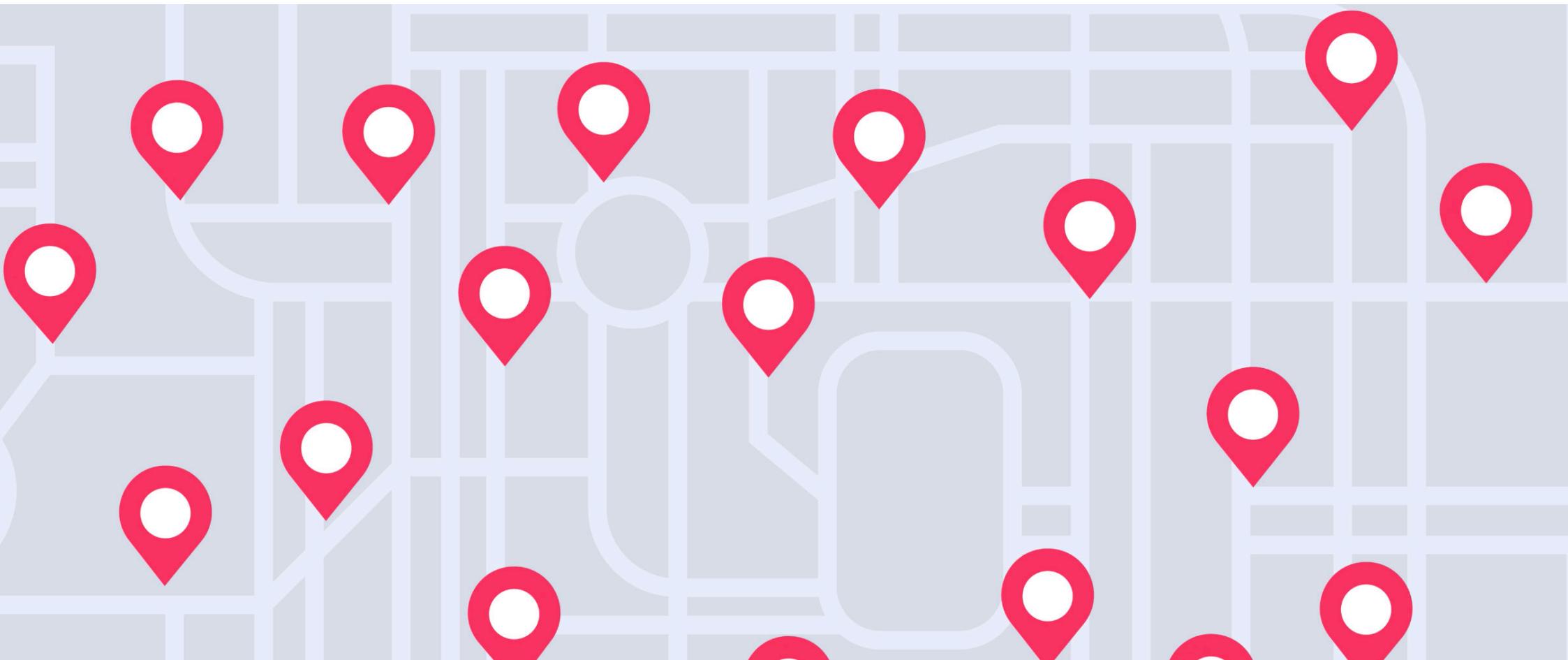


Single global integration (all parties are integrated w/ Beam protocol)



Road map

White Paper v1.9



Go to Market

Beam's existing integrations with POS systems and acquirer terminals mean that over 400,000 brick-and-mortar stores are already technically enabled to process Beam transactions worldwide. In Australia, Sweden and UAE over 5,000 stores are live and accept Beam transactions. In the short term, we will focus on incentivising the 395,000 stores that are technically ready to process Beam transactions to activate Beam at their stores.

In the medium term, we will focus on growing the technical acceptance network, as it represents one of the major prerequisites for Beam's success. Therefore, our primary focus in the next 18 months is to grow Beam's technical acceptance network to 3 million stores worldwide with at least 250,000 stores live and accepting Beam transactions.

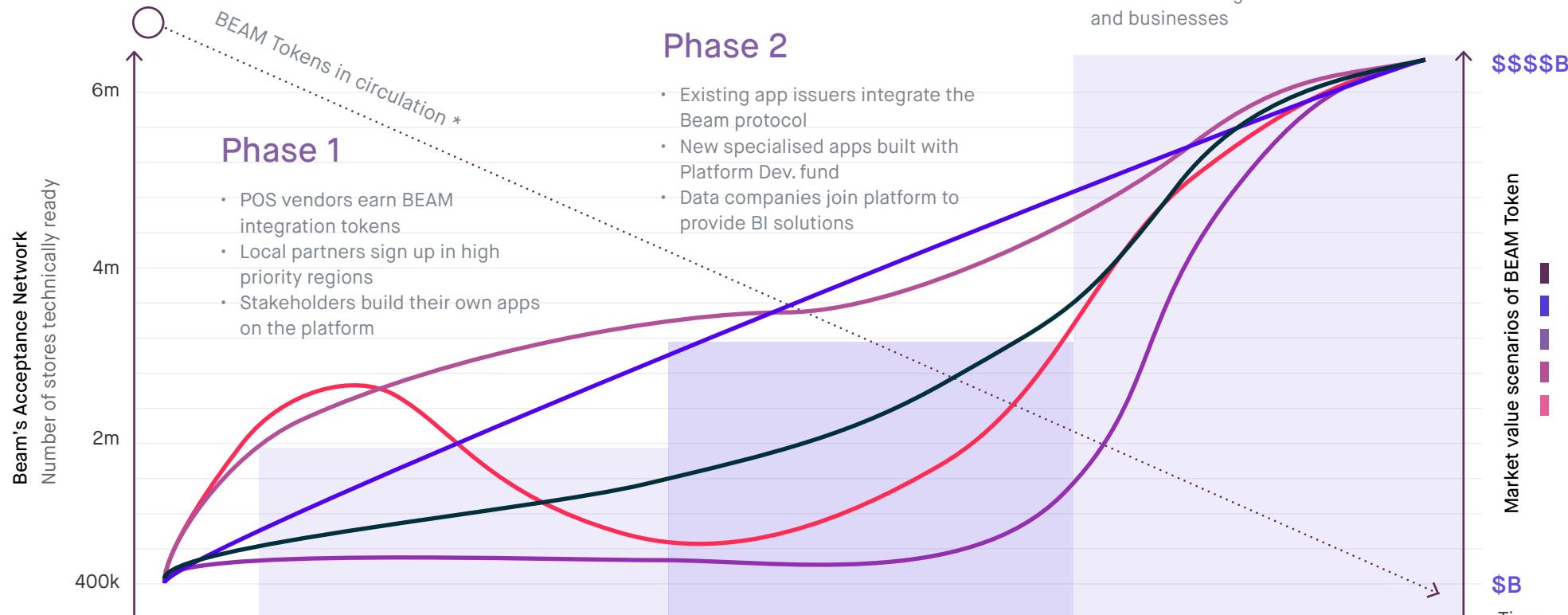
In parallel, we will expand our Local Partner network. Currently, we have Local Partners in Australia, Sweden, UAE and are in the final stages of expanding to the Netherlands, Portugal, Spain, South Africa, Singapore and New Zealand. A key responsibility of Local Partners are to onboard retailers in their region and grow Beam's acceptance network.

To accelerate the expansion of Beam's acceptance network, we have allocated 40% of all BEAM tokens to the Network Development Fund. POS vendors, existing acquirer networks and retailers will earn BEAM tokens for each store they bring to the network. The sooner they enable their stores to accept Beam transactions, the more BEAM tokens they will earn.

$$1 / \{ \text{Balance of tokens in the Network Development Fund} \\ = e^{\{\text{decay rate}\}} * 500,000$$

Technical acceptance makes it easier for Local Partners to onboard retailers; the presence of stores accepting Beam in a given locality in turn provides the monetary incentive for Issuer Apps to bring their Users to the network.

Strategic Priorities



Local Partners	Live	Assigned	Negotiating



* As a result of Local Partner's requirement to hold BEAM tokens, supply of BEAM tokens in circulation will continuously reduce as more Local Partners launch Beam in new cities and countries.

Zero payment processing fees

In order to accelerate the rate of adoption in all markets where Beam is launched, we will drop the minimum reward contribution amount of 2% and offer zero payment processing fees to all merchants on the Beam Network. Whilst the global average of 2% to 3% payment processing fee may look like a low number on its own, when the net payment processing fees are applied over a merchant's net profit, the fees amount up to 30%. Therefore, eliminating the payment processing fees will help merchants to improve their profitability by up to 30%.

For example: Jane runs a bakery. 100% of customers use cards. They like to tap & go. Jane's bakery generates \$200,000 in gross sales. Jane pays \$4,000 payment processing fees and \$700 for leasing two credit card terminals each year, totaling \$4,700. After all expenses, salaries and taxes Jane takes \$16,000 net profit home.
\$4,700 / \$16,000 = 29%.

30% improvement in profitability is a great incentive and motivation for merchants to increase their volume of Beam transactions. The knock on effect of this incentive is that merchants will take ownership of Beam and promote it to their customers. This will reduce both the merchant and customer acquisition costs and increase the number of merchants joining the network in an accelerated manner.

In order to accommodate the zero payment processing fees and cover the costs of processing fiat to crypto transactions in a sustainable manner, Beam will utilise an inflation mechanism to issue up to 1.5% additional tokens each year equivalent to the cost of fiat to crypto conversion. The inflation will be used to reduce Beam's processing costs and be applicable only for the first five years up until the network is big enough to keep much of the flow of funds within the Beam Network. The benefits of "zero payment processing fees" to merchants outweighs the cost of issuing new tokens for existing token holders, as it has a direct impact on the appreciation of BEAM tokens in a quicker time frame and to the overall success of the project.

Role of Developers

Point of Sale vendors and app developers can join the Beam Platform as Acquirers and Issuers by integrating Beam into their POS systems and apps respectively. With this integration, POS vendors as Acquirers can process card and crypto transactions without having to integrate with apps individually and without the need for PCI compliance. Similarly, app developers as Issuer Apps can integrate Beam in a PCI and GDPR compliant manner to process card and crypto transactions for their users without having to integrate with POS vendors individually.

POS vendors as well as existing Acquirer networks and app developers can start generating new streams of revenue immediately.

Acquirers

POS vendors are incentivised to become Acquirers by integrating their terminals to the Beam Network so their retailers are technically ready to start accepting Beam. Technical readiness for acceptance is a key step in growing the Beam Network and offers POS vendors an ongoing revenue stream for facilitating and maintaining the network.

All POS vendors are required to do is integrate their systems to the Beam network and then maintain this integration. Beam handles all settlement to the retailers as well as the bulk of compliance. Being integrated to the Beam network allows the terminal to process transactions initiated by any Issuer apps.

Issuer Apps

App developers can integrate Beam into their existing apps via the Beam SDKs to become Issuer Apps. This allows users of the app to make card and crypto payments on any terminal active on the Beam Network while giving the app developer a new monetisation stream. App developers can also increase usage of their own apps through additional rewards issued via the Beam Platform.

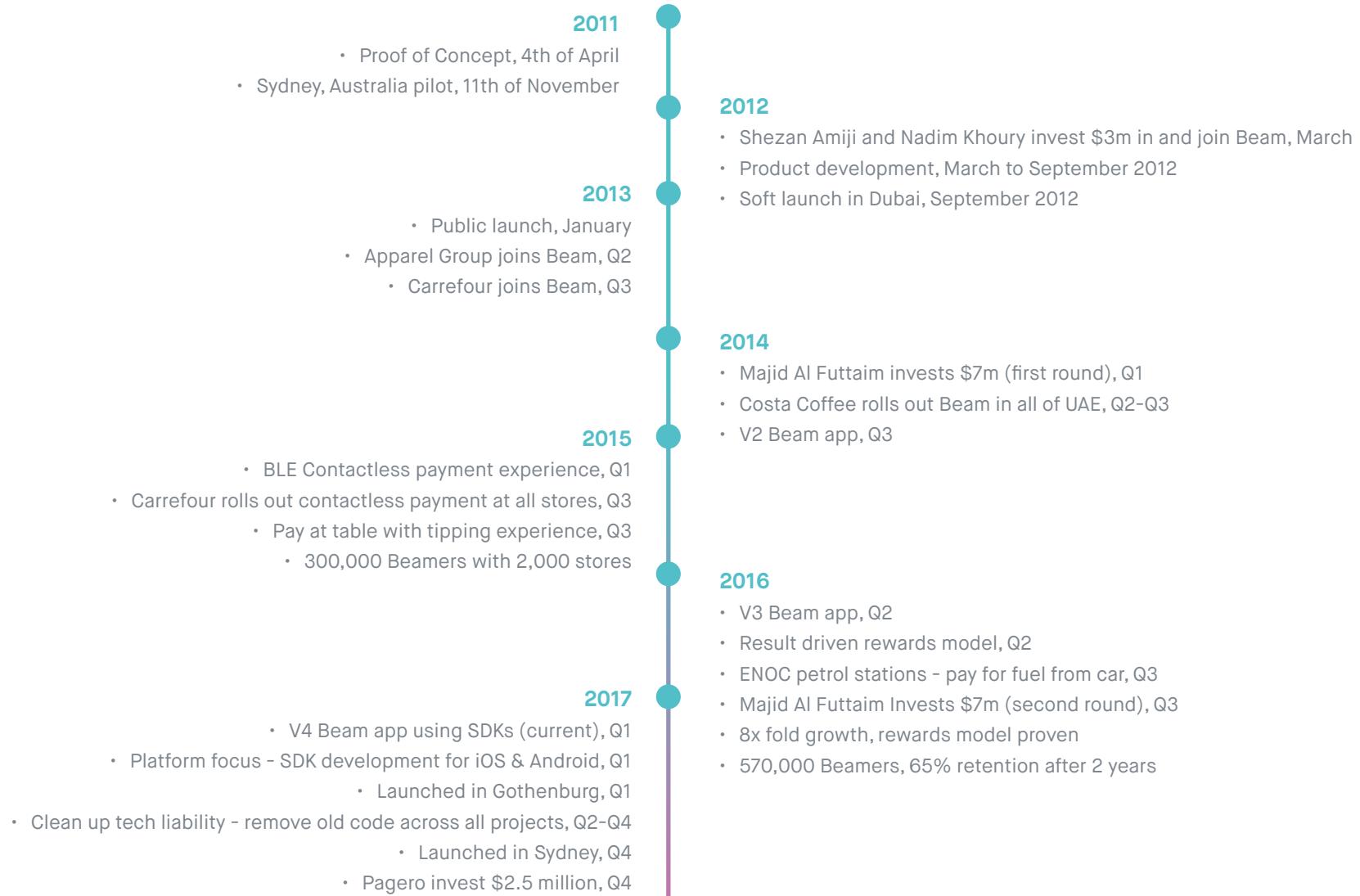
POS Vendors / Acquirers	App Developers / Issuers
Phase 1 - available now	<p>Integrate with Beam Platform*</p> <ul style="list-style-type: none">• Process card & crypto transactions• Manage accounts• Process card & crypto transactions• Earn and issue rewards to users
Phase 1 - post ICO	<ul style="list-style-type: none">• Earn activation bounties from Network Development Fund• Generate revenues from processing transactions on the Beam Network
Phase 2	<ul style="list-style-type: none">• Integrate the Beam Protocol***

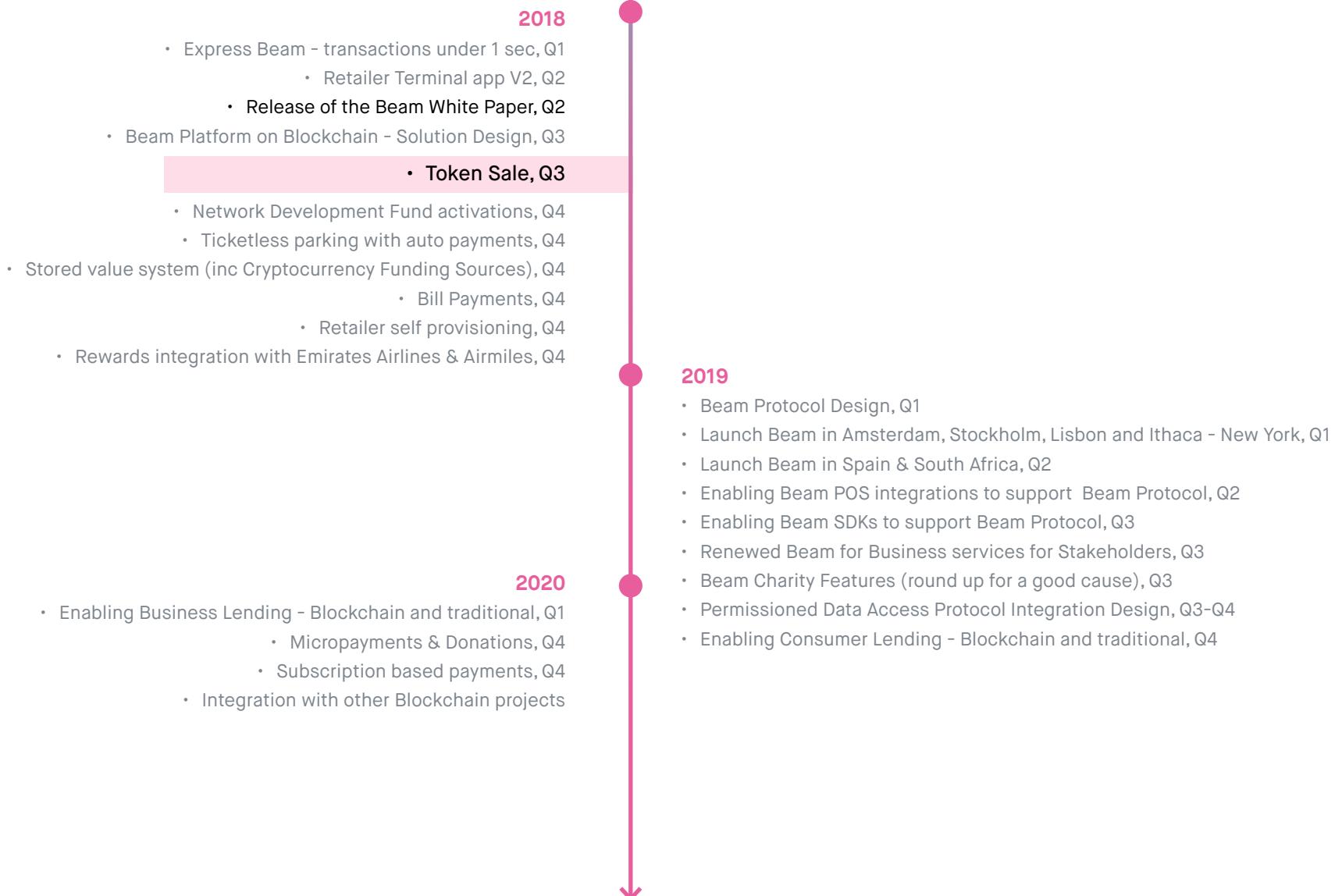
* <https://beampay.atlassian.net/wiki/spaces/PUBLIC/pages/131214424/Beam+Terminal+API+4.0+Documentation>

** Currently in closed beta

*** We will move the current Beam Platform into a decentralised system by building our own protocol. When this is launched Acquirers and Issuer Apps will be encouraged to integrate directly with the protocol. Existing integrations will be automatically backed onto the protocol.

Product Roadmap





Token Sale

White Paper v1.9

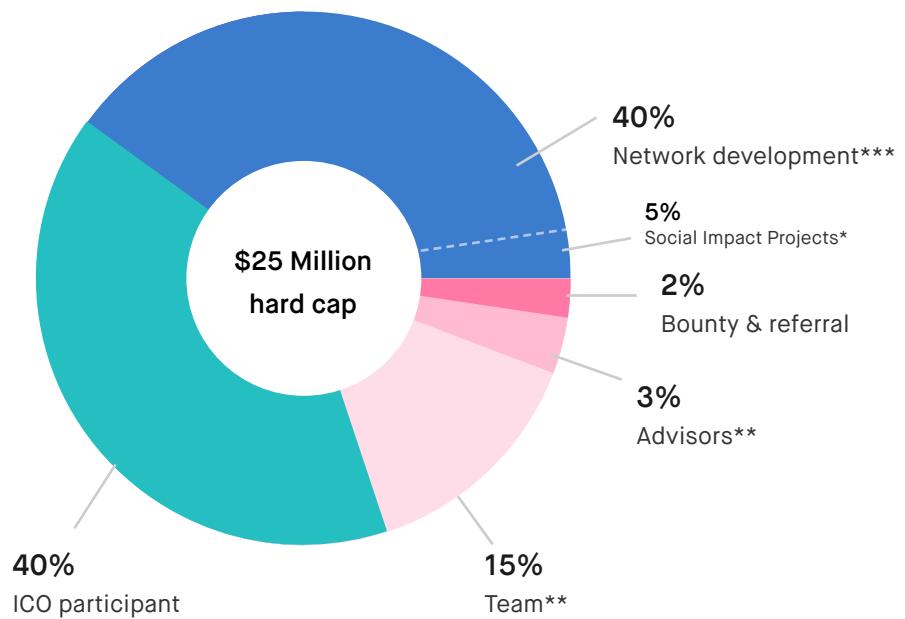
Token Specifications

Name	BEAM Token
Platform	Ethereum - ERC20 Token
Purpose	Growth and usage of Beam Platform
Divisibility	18 decimals
Underlying value	Network value
Supply	10,000,000,000 fixed supply - 1.5% per annum issuance for 5 years*
User classes	ICO Participants, Local Partners, Retailers, Customers, Acquirers, Issuer Apps, Brands, Malls, Lenders etc.

* See “Zero payment processing fees in Roadmap > Go to market”

** Note: Global BEAM Tokens can be converted to local currencies such as Euro Beams, Dirham Beams or US Beams and spent on the Beam Network. We will also support other cryptocurrency holders to spend their holdings on the Beam Network through BEAM and local currencies.

Token Sale Distribution

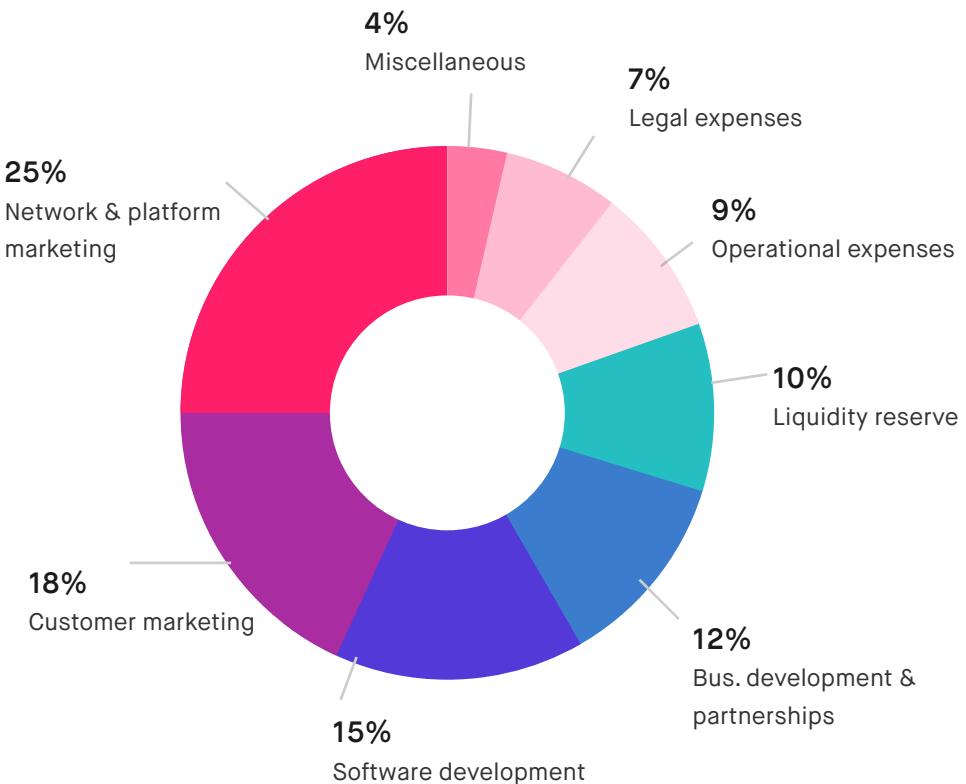


* 5% of all BEAM tokens will be donated to Qoin Foundation for growing the Beam Network in localities that focus on Social Impact projects.

** Tokens allocated to the Team and most advisors will vest in a periodic manner spanning over 2 years. The schedule is: 3 months: 10%, 6 months: 20%, 12 months: 20%, 18 months: 25% and 24 months: 25%

*** Network development tokens will be distributed to retailers and POS systems joining the platform. These tokens will vest on a quarterly basis between 12 months and 4 years.

Use of funds



About Us

White Paper v1.9



Why Beam

Credibility, ability and experience

The blockchain startup space is brimming with great ideas, many of which have the potential to be highly disruptive and innovative. Unfortunately, a significant number of teams developing these ideas and taking them to market lack the experience or deep understanding of the fields they hope to disrupt.

Beam, however, has proven the success of both its business model and its platform over the past six years.

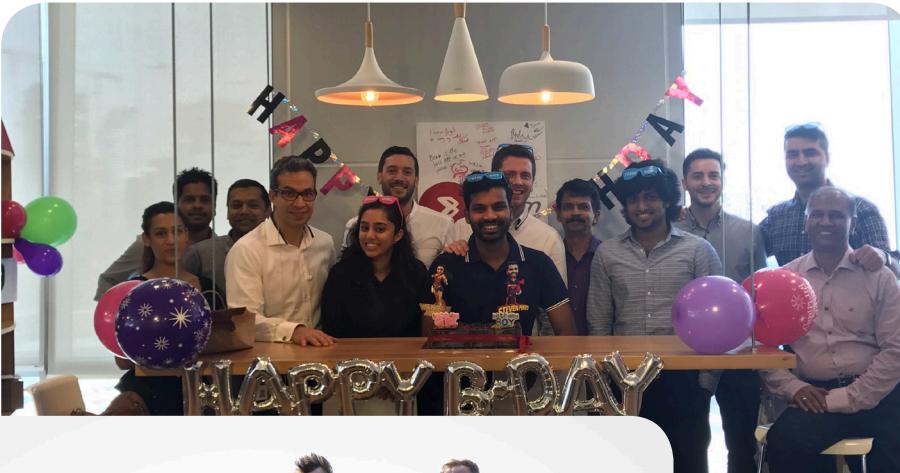
We have industry-specific experience of understanding challenges in marketing and payments. We've developed a solution tailored to solving these challenges to benefit all who generate value for the retail ecosystem and its customers.

The Beam team (engineering, product, leadership and advisory) is highly knowledgeable about the issues faced by all stakeholders in the retail ecosystem. We are demonstrably committed to tackling these issues, and uniquely positioned to do so by integrating blockchain into our existing platform.

Beam has already solved the mobile wallet problem for over 750,000 people, and will pass the value that is both saved and generated through the integration of blockchain technology directly to its users. By moving Beam's existing user base into the fold of blockchain advocates and beneficiaries, we will drive acceptance by the general population because of our credibility, ability and experience.



54 staff across 3 countries
devoted to changing the
face of payments across
the globe



UAE team

25 Team members based in Dubai devoted to
sales, support, ops, marketing



Australian team

18 Team members based in Sydney working on
product, development, UX & design



Swedish team

7 Team members based in Gothenburg focused on
sales, support, ops, marketing

Partners

MATTEREUM

Mattereum
Token economics and smart
contract design
www.mattereum.com

Tokenomics, smart contract
formation and execution.



QOIN

money that matters

Qoin
Community Currencies
www.qoin.com

Assisting with Tokenomics and
Community coin implementation.
Partner to launch Beam platform in
multiple cities across the world.



MAJID AL FUTTAIM

Majid Al Futtaim
Retail and Leisure pioneers
www.majidalfuttaim.com

Local partner across 6 Middle
Eastern Countries and early stage
investor in Beam.

PAGERO

Pagero
Cloud based payments
www.paginator.com

Local partner in Sweden and looking
to expand across the Nordics.



AmaZix
Community management
www.amazix.com



TLDR
Token sale advisory
www.tldr.capital

Conclusion

Collective knowledge of our needs and wants is the most valuable asset the world has. However, due to decaying payments infrastructure and misaligned incentives, we are not able to make any sense of it. This knowledge is the missing piece and remains a hidden treasure for the world's economy and prosperity.

The Beam Platform surfaces this hidden treasure and makes the customers, the owners of it. We then invite the retail value chain to tap into this knowledge in exchange for value. The terms of the exchange together with monetary rewards are then embedded into smart contracts that any participant can unlock by providing the required services to the retail value chain and its customers.

The Beam Platform is built on a level playing field, meaning anyone from any part of the world can participate as network participants. They are tasked with constantly looking for problems they can solve for the stakeholders of retail value chain and get rewarded every time they solve one. All the stakeholders have to do is to define their problems along with a set of measurable metrics and assign a monetary reward they are willing to contribute when they are solved.

Once Beam's acceptance network is built up globally, we will eliminate our dependency on the current payments infrastructure that is controlled by incumbents in payments along with tech giants that built empires trading our data. This will save the retail economy over \$4.5 trillion each year. More importantly it will unshackle the future of retail and bring it to the 21st century. In this future, concepts such as dynamic pricing and borderless instant transactions don't remain as unattainable dreams. Instead, as individuals, businesses and communities we enjoy the benefits of such concepts in our everyday life all around the world.

This is the future we want to live in. Let's build it together!



Disclaimer

The purpose of this white paper is to present the Beam crowdsale project to potential token purchasers in connection with the proposed token launch. The information set forth in this document may not be exhaustive and does not imply any elements of a contractual relationship. Its sole purpose is to provide relevant and reasonable information to potential token purchasers in order for them to determine whether to undertake a thorough analysis of the company with the intent of acquiring BEAM tokens. Nothing in this white paper shall be deemed to constitute a prospectus of any sort or a solicitation for investment, nor does it in any way pertain to an offering or a solicitation of an offer to buy any securities in any jurisdiction. BEAM tokens are not structured or sold as securities or any other form of investment product. This document is not composed in accordance with, and is not subject to, laws or regulations of any jurisdiction which are designed to protect investors. Certain statements, estimates, and financial information contained in this white paper constitute forward-looking statements or information. Such forward-looking statements or information involve both known and unknown risks and uncertainties which may cause actual events or results to differ materially from the estimates or the results implied or expressed in such forward-looking statements. Purchase of BEAM tokens involves a high degree of risk, and BEAM token purchasers should not direct any funds toward this crowdsale that they cannot afford to lose. See “risk factors” below that management believes present the most substantial risks to token purchasers in this crowdsale. In making a decision to purchase the BEAM tokens, the token purchasers must rely on their own examination of the project and the terms thereof, including the merits and risks involved.

This white paper is the primary official source of information about the BEAM token launch. No person has been authorized to give any information or make any representation with respect to token crowdsale, which is not contained in this white paper, and, if given or made, such information or representation must not be relied upon. The information contained herein may from time to time be translated into languages other than English or used in the course of written or verbal communications with existing and prospective customers, partners, etc. In the course of such translation or communication some of the information contained herein may be lost, corrupted, or misrepresented. The accuracy of such alternative communications cannot be guaranteed. In the event of any conflicts or

inconsistencies between such translations and communications and this official English language white paper, the provisions of this English language original document shall prevail. This white paper does not purport to be all-inclusive or contain all information that a prospective token purchaser may desire in investigating the project. Each token purchaser must rely on its, his or her own examination of the company and the terms of this white paper, including the merits and risks involved in making a decision with respect to the purchase of BEAM tokens. Prior to making an investment decision regarding the purchase of BEAM tokens, a prospective investor should consult his or her own counsel, accountants, investment and tax consultants, and other advisors, as to all matters concerning this purchase, and to carefully review and consider this entire white paper. BEAM token purchasers are entitled and encouraged to ask questions of the company or its representatives concerning the business and financial condition of the company and the terms and conditions of the crowdsale, and to request such data as may be necessary to enable them to make an informed purchase decision.

You acknowledge that you are neither a United States citizen nor a permanent resident of the United States, nor do you have a primary residence or domicile in the United States, including Puerto Rico, the U.S. Virgin Islands or any other possession of the United States. You are neither a citizen or permanent resident of the republic of Singapore, nor do you have a primary residence or domicile in Singapore. You are neither a citizen or permanent resident of Canada, nor do you have a primary residence or domicile in Canada. None of the owners or beneficiaries of any entity on behalf of which you are authorized to act, are U.S. citizens or permanent residents of the United States, Singapore, or Canada nor do they have a primary residence or domicile in the United States, including Puerto Rico, the U.S. Virgin Islands, or any other possession of the United States, Singapore, or Canada. If you, or the owners or beneficiaries of any entity on behalf of which your are authorized to act, are one of the aforesaid, you are not eligible and are strictly prohibited from buying Beam tokens in any form.

Forward looking statements

Although forward-looking statements in this white paper reflect the good faith judgment of management, forward-looking statements are inherently subject to known and unknown risks, business, economic and other risks and uncertainties that may cause actual results to be materially different from those discussed in these forward-looking statements. Token purchasers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this white paper. We assume no obligation to update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this white paper, other than as may be required by applicable law or regulation. Token purchasers are urged to carefully review and consider the various disclosures made by us herein, especially in the section titled Risk Factors, which attempts to advise interested parties of the risks and factors that may affect our business, financial condition, results of operation, and cash flows. If one or more of these risks or uncertainties materialize, or if the underlying premises of our business plan prove incorrect, our actual results may vary materially from those expected or projected. Important factors that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include but are not limited to:

- Competitor's response in the market;
- Our ability to control costs in general;
- General regional and global economic conditions;
- Lower levels of consumer confidence, consumer spending and purchases of discretionary items;
- Restrictions in the credit and capital markets, which would impair our ability to access additional sources of liquidity, if needed;
- Changes in the availability and cost of raw materials which could impact prices of our products;
- Our ability to anticipate and respond to constantly changing consumer demands;

- Our ability to attract and retain talented, highly qualified executives and employees;
- Our ability to adequately establish, defend and protect our proprietary rights;
- Our ability to successfully develop or acquire new product lines or enter new markets
- Or product categories, and risks related to such newlines, markets or categories.

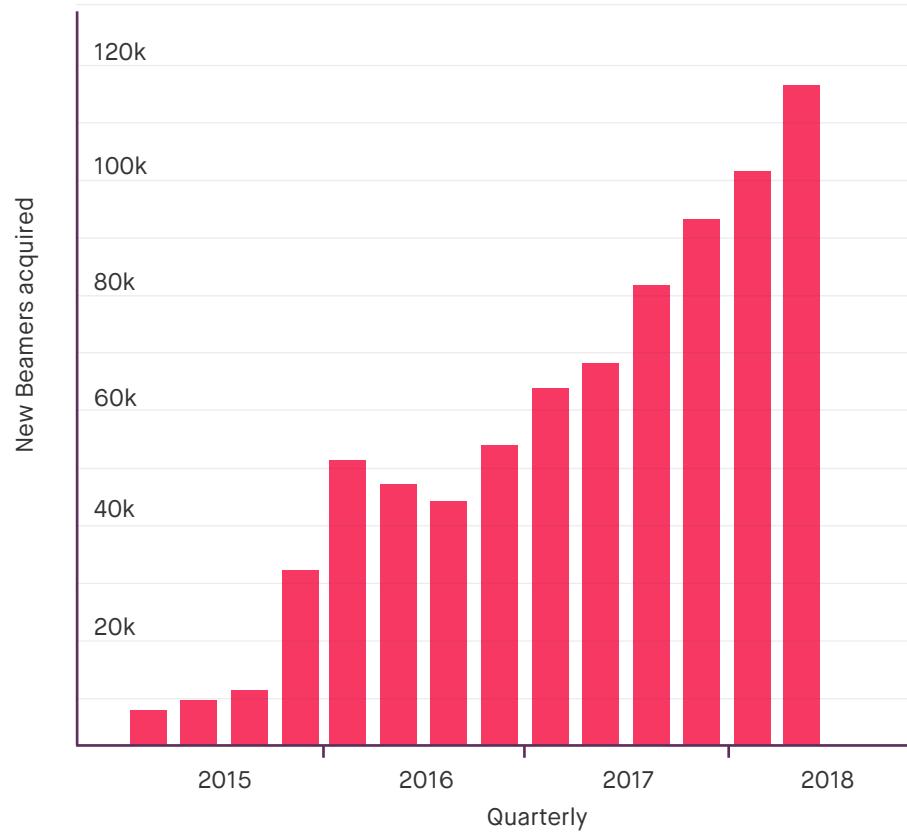
We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, unless so required by applicable law. Because of these risks, uncertainties and assumptions, the forward-looking events discussed in this white paper might not occur. To the extent that we use market data and industry standards in this white paper, such information shall have been obtained from internal surveys, market research, publicly available information and industry publications. Industry publications generally state that the information they have provided has been obtained from sources believed to be reliable, but the accuracy and completeness of such information is not guaranteed.

We caution you that actual results or business conditions may differ materially from those projected or suggested in forward-looking statements as a result of various factors including, but not limited to, those described above and in the Risk Factors section of this white paper. We cannot assure you that we have identified all the factors that create uncertainties. Moreover, new risks emerge from time to time and it is not possible for us to predict all risks, nor can we assess the impact of all risks on our business or the extent to which any risk, or combination of risks, may cause actual results to differ from those contained in any forward-looking statements. Token Purchasers should not place undue reliance on forward-looking statements.

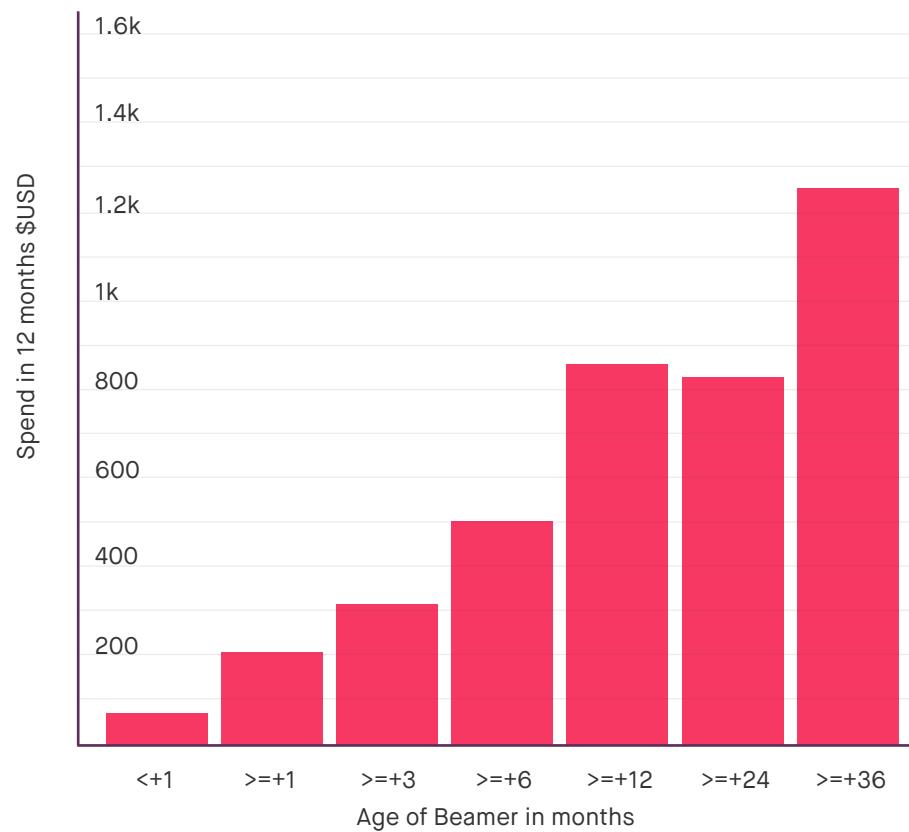
Appendix

Beam in numbers

Total Beamers over time

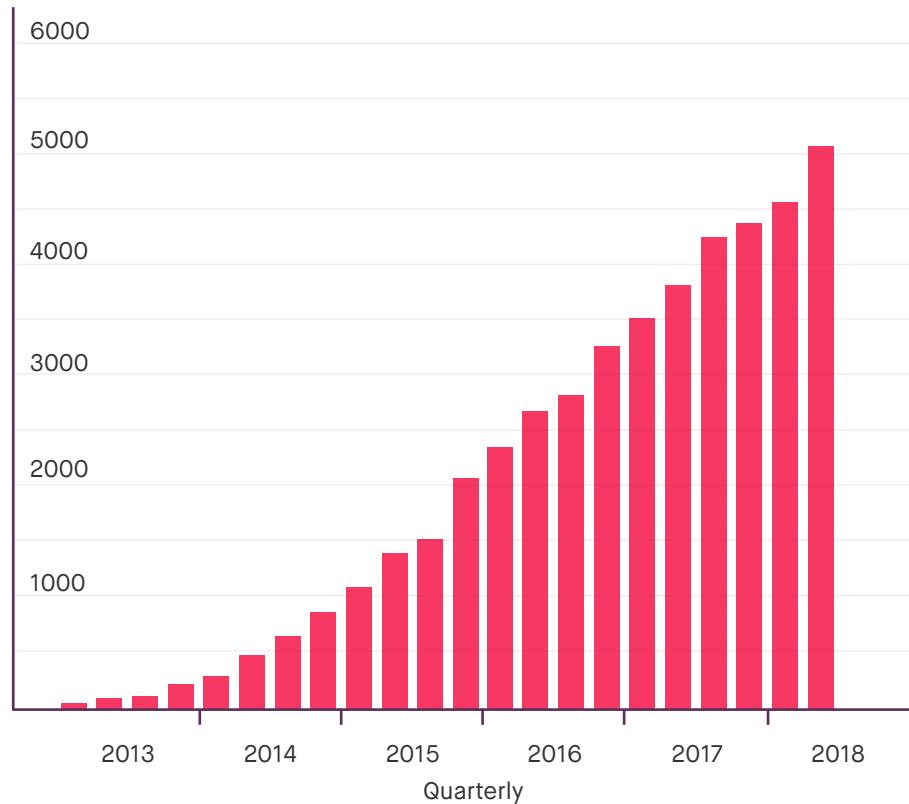


Older Beamers spend more



Network

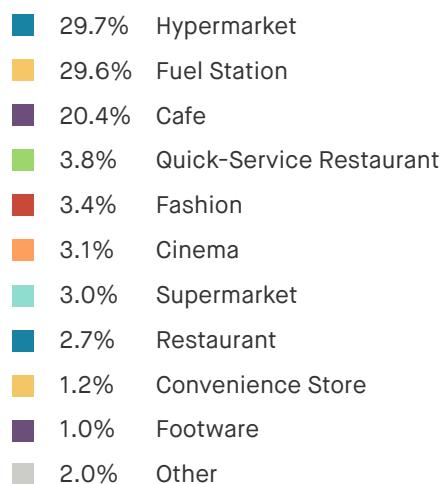
Retail network growth quarter on quarter



Retailer diversity



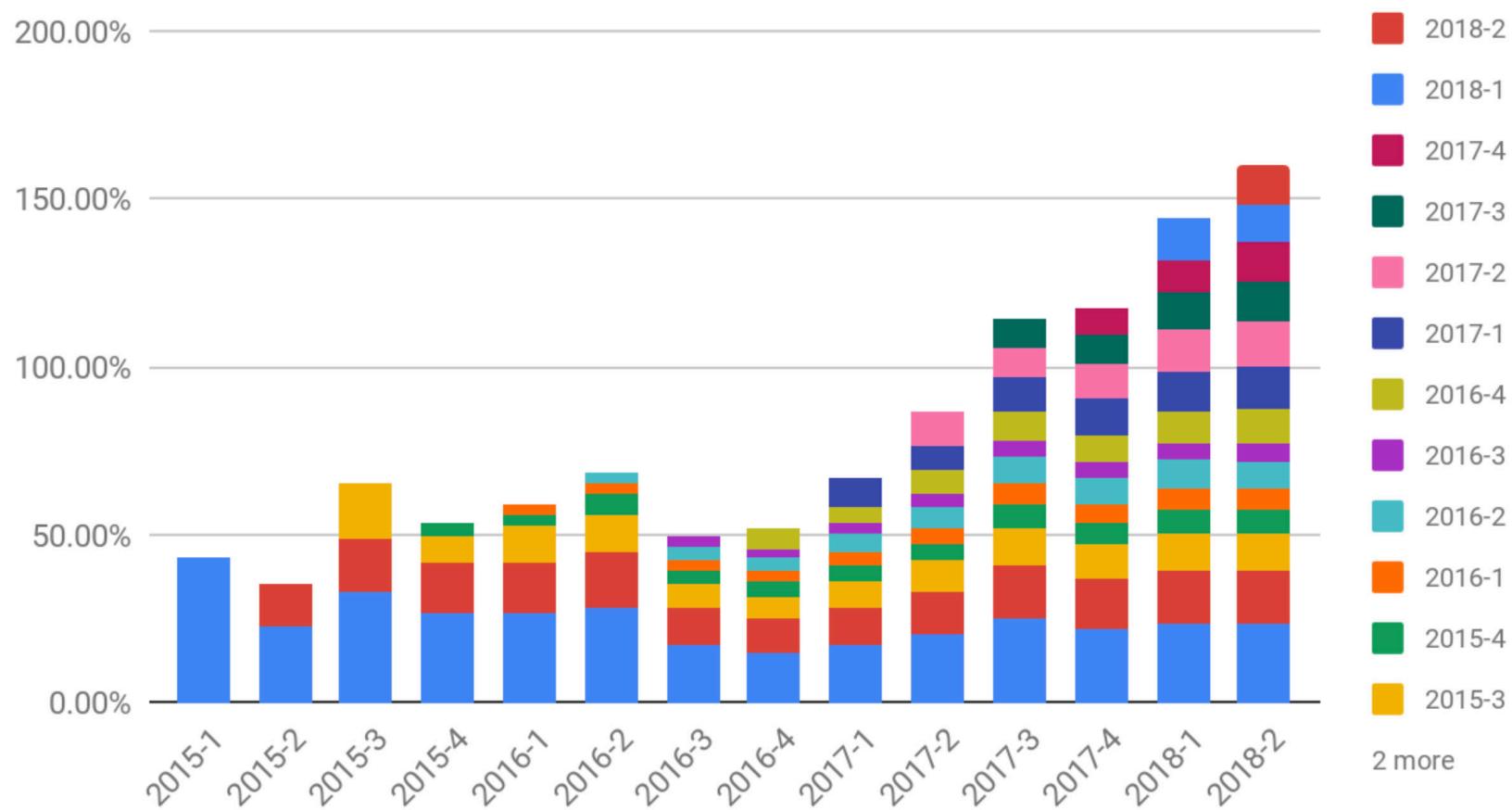
Diversity of transactions



Beamers

% of transactions at new stores by cohort

This chart illustrates how we've been able to encourage customers to transact in new stores across the network via the correct incentive model.



Sample retailer report

beam Insights Users | My Account | Logout

Dashboard Customers Transactions Feedback Reports Settings

Example Store Group

Date Range Last 6 months

Overview

Unique Beamers	Total # of visits	Total transactions	Your Throughput	Avg. Txn. Size	Spend per Beamer
55,755	780,570	248,078	AED 18,032,789	AED 72.69	AED 323.4

Conversion funnel

Customer insights

Store Visits: 780,570 Transactions: 248,078

Rewards

Reward insights

Total Redeemed	Avg Spend per Beamer
AED 1,602,754	AED 323.40
Retailer contributed	Rewards per Beamer
AED 1,457,049	AED 26.13
Other store rewards	Avg Reward %
AED 145,705	8.08%

NPS / 44 ▲ up 1pt

NPS insights

Feedback

[View all](#)

“ The service from our waiter was very rude this morning at 10am”
9:45am - 10 Sept

Rewards per customer type

Reward insights

1.6M Throughput

- 39.3% New Customers
- 25.8% Existing Customers
- 21.8% Lapsed Customer
- 6.6% Unknown
- 6.5% No Category

Transaction totals per reward type

Push (Beamer with reward)

Category	Value
New	2,212,442
Existing	1,652,478
Lapsed	1,344,440

Pull (Beamer without reward)

Category	Value
New	3,596,127
Existing	2,956,002
Lapsed	1,265,640

This is an example of a 6 month report for a Store Group on the Beam Network.

Technical Architecture

Issuer Apps are provided with an SDK they can simply integrate into their apps to perform transactions on behalf of customers. The POS vendors are also provided with a set of APIs to process transactions on behalf of retailers. The SDKs provides a PCI compliant process for customers to enter card details eliminating removing the burden of compliance from all parties joining the Beam Platform.

A conversation in Beam

A payment conversation in Beam starts with a customer at a store. The customer is using an Issuer App with the Beam SDK and has a Beam account. The POS system is integrated into the Beam Platform.

The steps:

1. The customer opens the Issuer App and taps their device on the Beam terminal on the counter. This terminal contains a BLE Beacon. The BLE Beacon broadcasts a random unique identifier. The Beam SDK sends the Beam Platform a request-to-pay message containing this identifier.
2. The cashier enters the sale on their POS system in the same manner as any other transaction and selects Beam as the tender type. The POS sends the Beam Platform a request-for-payment message containing the amount to be paid.

3. If required, Beam will top up the customer's wallet by taking in funds from an external source such as traditional credit cards or other cryptocurrencies.
4. The Beam Platform matches the two requests and facilitates the payment in the appropriate currency of the region in which the transaction is processed. Transferring the balance from the customer's wallet to the retailer's wallet.
5. The POS system and the Issuer App receive success notifications and the sale is closed.
6. The reward amount is calculated as per the smart contract attached to the sale and it is deducted from retailer's wallet before it is distributed to network participants as per the pre-defined split. See "Opening Beam to the World in Alignment of Incentives" and "Earning BEAM in Token Economics" sections.

Note: No sensitive information, such as card data or personally identifying information, is transmitted to or from any party in this transaction. There is no direct communication between the customer's device and the POS system. All parties solely communicate solely with the Beam Platform, which orchestrates the transaction. The Beacon only broadcasts a random unique identifier that the Beam Platform can use to join the request to pay with the request for payment.

Why BLE Beacons

Beam is agnostic about the technology used to communicate to the customers' phone at the checkout. There are some obvious limitations, in particular, the NFC restrictions that block access to and paying with the cards linked to Apple Wallet using NFC on Apple devices. Beam has used QR codes in the past and is open to using any appropriate technology based on its merits for the use case. That said, Beam has currently standardised the use of BLE Beacons at the checkout and has years of experience working with and managing the thousands of beacons we currently have deployed.

There are three reasons we have standardised on beacons:

- They are platform agnostic. BLE is supported by both iOS and Android as well as a large number of other devices, including an increasing number of POS terminals.
- When a phone detects a beacon that is pre-registered with location services, the device wakes the associated app, even if it isn't running. This gives the app a chance to evaluate the context and decide whether it is appropriate to send an offer push message from the store the customer has just walked into.
- The signal strength can be adjusted from a few centimeters to 80 metres. This allows using them for NFC style tap payments, dine in payments without leaving your table, and fuel payments from the car.

What are BLE Beacons

Bluetooth beacons are hardware transmitters¹³ - a class of Bluetooth low energy (BLE) devices that broadcast their identifier to nearby portable electronic devices. The technology enables smartphones, tablets and other devices to perform actions when in close proximity to a beacon.

Bluetooth beacons use Bluetooth low energy proximity sensing to transmit a universally unique identifier picked up by a compatible app or operating system. The identifier and several bytes sent with it can be used to determine the device's physical location, track customers, or trigger a location-based action on the device such as a check-in on social media or a push notification.

We use Bluvision beacons
across our network:
www.bluvision.com



Network development fund

A fund of 3.5 billion BEAM tokens is reserved as a incentive for POS vendors and retailers to join the Beam Network. This fund will be used to pay bounties to both the POS vendor and retailer as each terminal is activated. Note that this is per terminal, so if an individual store has multiple terminals they can earn multiple bounties.

Activated is defined as processing the first transaction. This entails both the POS being integrated to the Beam Network as well as the Retailer having an agreement with the Local Partner. Upon the first transaction being processed the bounty is split between the POS vendor and the retailer.

The formula

The bounties are issued from the 3 billion token pool using the exponential decay formula: https://en.wikipedia.org/wiki/Exponential_decay this is intentionally designed to disproportionately reward the earlier activated terminals over the later activated terminals in order to create an incentive to come online as soon as possible with compensating for the smaller network for the early adopters.

We can write the formula as:

$$1 / \{number\ of\ tokens\ available\} = e^{\{decay\ rate\} * \{number\ of\ integrations\}}$$

The formula can also be re-written as:

$$\begin{aligned}\{decay\ rate\} &= \\ \ln(1 / \{number\ of\ tokens\ available\}) &/ \{number\ of\ integrations\}\end{aligned}$$

Thus the decay rate for the Beam Network Development fund is:

$$-0.00004364375625 = \ln(1 / 3000,000,000) / 500,000$$

To work out how much activation of each terminal gets we rewrite the formula again:

$$\begin{aligned}\{total\ tokens\ in\ bounty\} &= \\ \{number\ of\ tokens\ available\} * e^{\{decay\ rate\} * \{activation\ number - 1\}} &\\ \{number\ of\ tokens\ available\} * e^{\{decay\ rate\} * \{activation\ number\}} &\end{aligned}$$

This bounty is then evenly split between the POS vendor and the retailer.

Example bounty payouts

Store #	Total bounty	POS / Terminal bounty	Retailer bounty	Store acceptance pool
1		70,749	106,124	3,999,823,127
2	176,865	70,746	106,119	3,999,646,263
3	176,857	70,743	106,119	3,999,469,406
4	176,849	70,740	106,109	3,999,292,557
5	176,841	70,737	106,105	3,999,115,715
10	176,802	70,721	106,081	3,998,231,626
100	176,100	70,440	105,660	3,982,351,401
1,000	169,229	67,692	101,538	3,826,977,169
10,000	113,668	45,467	68,201	2,570,507,004
50,000	19,385	7,754	11,631	438,383,291
100,000	2,125	850	1,275	48,044,977
150,000	233	93	140	5,265,529
200,000	26	10	15	577,080
250,000	3	1	2	63,246
500,000	0.000044	0.000018	0.000027	1

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Retrieved from <http://www.oxfordreference.com/view/10.1093/oi/authority.20110803095637587>
- 12 Average household income is \$9,733 per year. Total number of households is 1.6 billion. $\$4.5 \text{ trillion} / \$1.6 \text{ billion} = \$2.8k$ "
Source: <https://news.gallup.com/poll/166211/worldwide-median-household-income-000.aspx>
https://en.wikipedia.org/wiki/List_of_countries_by_number_of_households
- 13 BLE Beacon description - https://en.wikipedia.org/wiki/Bluetooth_low_energy_beacon
- 14 Total global retail economy is \$25 trillion each year. At 10% inefficiency rate given the lack of understanding customer behaviour the waste and opportunity cost is measured at \$2.5 trillion annually.