

# the future of retail

The year is 2050. 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 instead. Closets declutter automatically, rooms design themselves, grocery lists are replenished without effort, and restaurants book themselves.

Most importantly, the war on data has been won, and the era of search is over. All our data belongs to us and to us alone, and we get paid to share it. In turn, this has created a retail world that is symbiotic our real needs and wants.

In a short time, the world of retail has become optimally efficient. As customers we save on our spend, as businesses we generate more profit, as communities we have displaced monopolies and duopolies and as citizens we have reduced our carbon footprint.

This is the future we want to live.



## Meet Beam

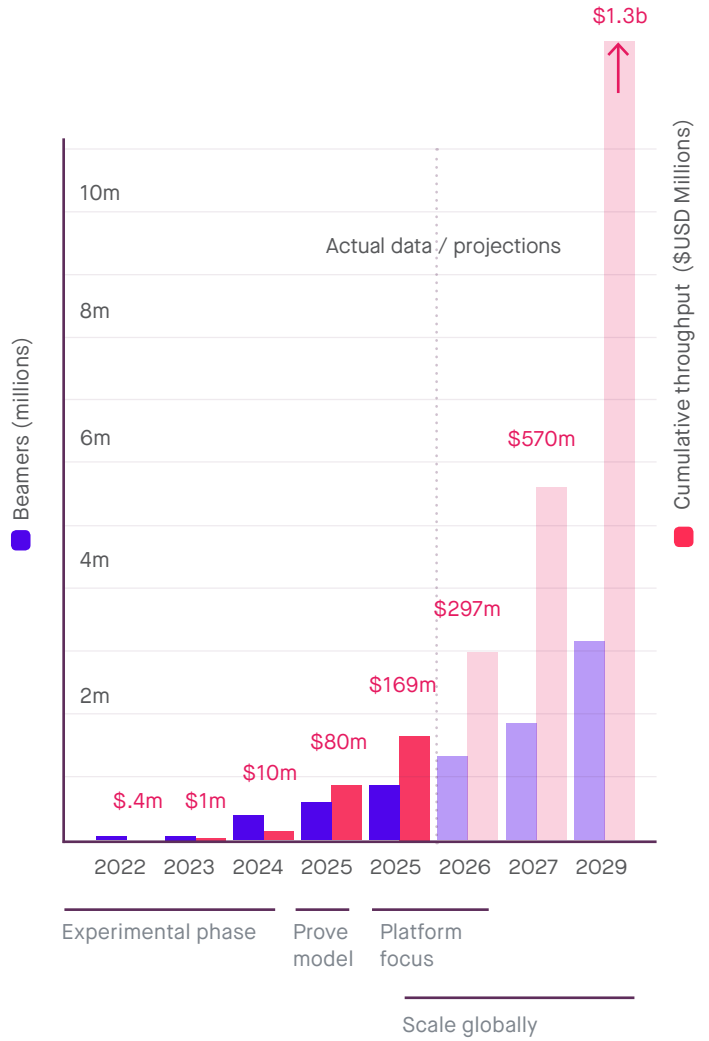
We created Beam to help stakeholders of retail value chain engage with their customers in a more meaningful and effective manner.

Beam is a global payments acceptance platform built for 21st century commerce with mobile phones and the internet in mind. Today, Beam's technical network reach exceeds 400,000 stores globally with over 5,000 live stores in three continents. The Beam Network has amassed over 750,000 users and having processed over \$250 million and 4.3 million transactions we have proven the benefits of Beam at scale.

We aim to overturn the status quo in retail value chain and pave the way for a brave new future. Our ambition is matched by our domain expertise, ability and experience.

## Our difference

The blockchain startup space is brimming with great ideas, many of which have the potential to be highly disruptive and innovative. Our difference is that we have a proven track record building the Beam Platform since 2013. More importantly, we speak the language retail value chain understands ranging from mum and dad stores to enterprise retailers such as Carrefour, Costa Coffee, ALDO, Tommy Hilfiger and many more.



CALVIN KLEIN



#5 in Financial IT Pathfinder Rankings for 2016/2017

ALDO



COSTA

Ranked No.5 on the Top 50 most promising startups in Europe. Selected by an expert panel of industry veterans, venture capitalists (VCs), editors and research analysts.

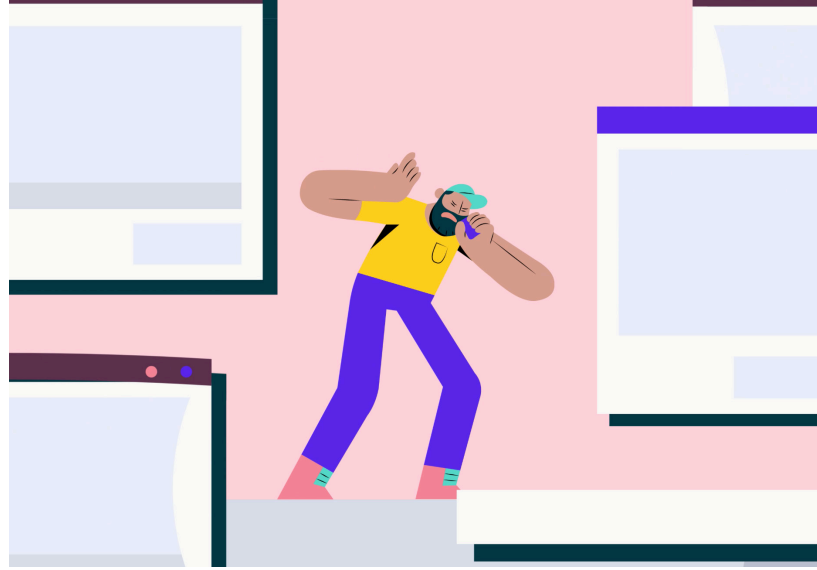


# The War on Data

## Misaligned incentives

Today retail value chain is run in a centralised manner with misaligned incentives. As a result, it is extremely inefficient. Its stakeholders are at war with each other and with the tech giants over our data. Each party holds a piece of the puzzle but no one has a complete picture of individual customer behaviour that dictates demand and supply.

Companies we come into digital contact with own fragments of our data in disparate centralised databases. Since the fragments don't tell a person's whole story, we are hit with billions of advertisements, hoping something will stick.



In advertising, 1% conversion is considered a success.

## The retail economy is held hostage by the incumbents in payments and tech giants

Under the guise of connecting people through their free services, the tech giants such as Google, Facebook and Amazon are leading the war on data. Equipped with our data, tech giants along with media oligopolies and incumbents in payments such as Visa and MasterCard are exploiting the void in retail value chain for maximum gain.

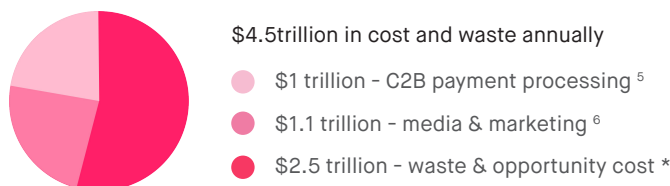
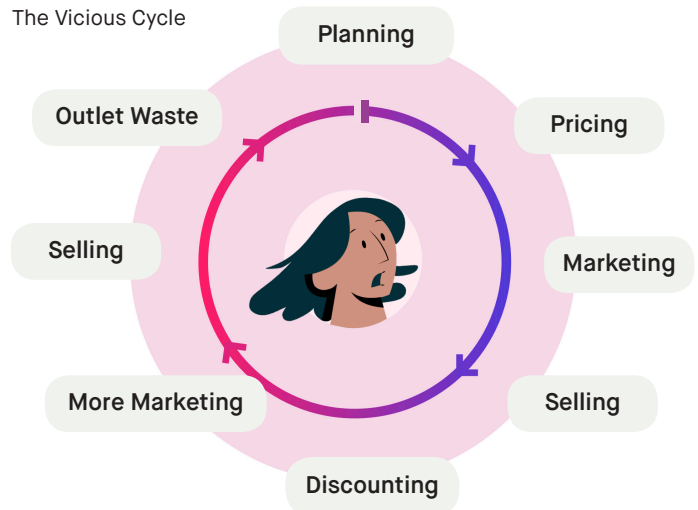
Tech giants' sell our data, while we get very little in return.

## Zero incentive to change

Inefficiencies in the retail value chain costs us over \$4.5 trillion each year in the form of waste, opportunity and cash cost equating to \$18 on every \$100 spent; taxing each household \$3,000 a year. A massive 33% of global average income. Waste and opportunity cost are born out of erroneous decisions in production planning and pricing strategies while cash cost is an outcome of a 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, tech giants and incumbents have zero incentive to change the status quo placing the entire retail value chain in a vicious cycle.

The Vicious Cycle



# Winning the War on Data

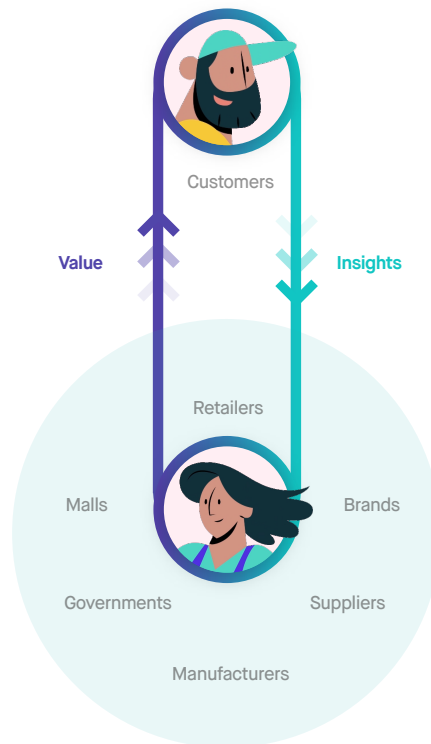
The emergence of blockchain technology is the greatest opportunity in the history of retail to eradicate waste and eliminate inefficient incumbents.

## Deciphering customer behaviour is key

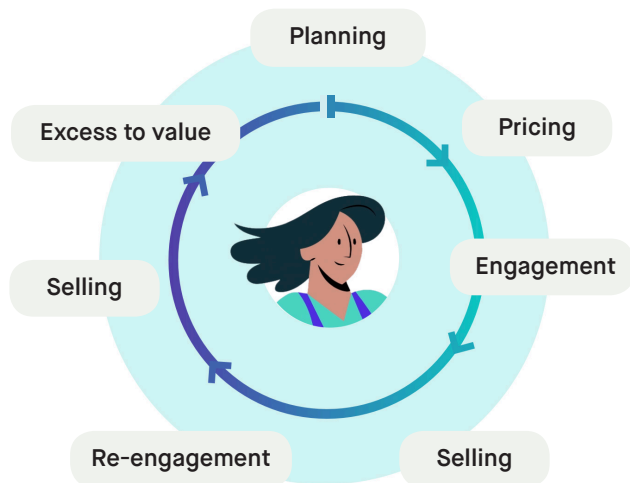
Understanding customer needs and wants is the key to informing demand and supply, and there's really only one source of truth when it comes to customer data - the customers themselves. We are building the future of retail where customers are the owners of their data.

Beam harnesses the power of the internet, mobile phones and blockchain to put us, the customers in charge of our data. Not only will our data belong to us, we will also get paid for it.

Rather than wasting trillions on payment fees and media buying the value chain will reward its customers directly.



The Virtuous Cycle



Every transaction solves a problem and generates insights helping the value chain optimise planning, pricing, marketing and improve its performance on a continuous basis.

## The power of a proven model

Today, retailers on the Beam Platform define challenges to acquire, engage and retain customers. They define the type of behaviour they wish to drive and corresponding reward amount they are willing to contribute for it. This is a proven and risk free marketing since the contribution is only made when all of the conditions set by the retailers are met.

This model provides the retailers with a cost efficient and more effective way to acquire, engage and retain customers. Today, with **every Beam transaction retailers outside grocery and fuel, on average, contribute 16% of the sale**. The platform then uses 60% of this to drive further engagement and retention of customers on the network. And with all the insights attached to every transaction, retailers are able to precisely measure their ROI on every cent contributed on the platform.

## Decentralising ownership

Currently, Beam fulfils the functions of an Issuer, Acquirer as well as the Local Partner and a technology provider. Beam's operation in a given city is also responsible for growing the Beam Network as well as providing customer support.

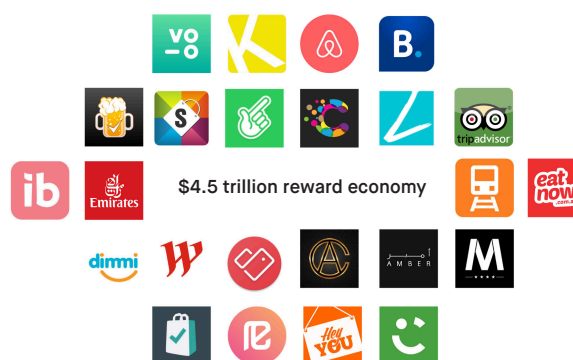
We are opening up the Beam Platform to accelerate its growth globally by increasing participation on the network. As part of this, utilising the blockchain we are turning all of the current and future challenges defined on the Beam Platform into smart contracts with built in incentives. Anyone can join the network as a participant and can solve these challenges to unlock the value attached to smart contracts. The participants will fulfil the role of an Issuer, Acquirer as well as a Local Partner on the Beam Platform.

All of the revenues generated on the platform will now be distributed between these actors globally based on quantifiable value each participant creates for the network.

## Removing the barriers to entry

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

We empower apps to process transactions on behalf of its users and POS vendors on behalf of its retailers; all without having to invest in PCI compliance, a banking license or 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.



**\$4.5 trillion challenge economy for participants to unlock**

## A challenge-based economy in the future

Once the Beam Platform onboards a sizeable network of users and stores globally we will introduce additional services focusing on improving the performance and efficiency of the retail value chain beyond demand generation. These services can be provided by anyone ranging from individuals to enterprise businesses.

The objective is to help the stakeholders define the problems they face with planning, pricing, inventory management as challenges with measurable criterion and corresponding amounts they are willing to contribute as a reward when a challenge is solved. Participants will be incentivised to provide highly personalised services to the customers using deep data analytics, machine learning, artificial intelligence as well as visualisation through augmented reality.

Every solved challenge leads to a virtuous cycle re-enforcing a positive feedback loop improving the baseline of the entire value chain on an ongoing basis.

## A token economy for the retail value chain

We have developed a token model specifically for the retail value chain. It brings the stakeholders of retail, their customers and network of participants together as a community and incentivises them with a \$4.5 trillion challenges economy to make the retail value chain optimally efficient.

BEAM tokens are used as incentives for network participants to help customers exchange data for value with stakeholders of retail. This exchange not only solves the customer behaviour puzzle previously deemed impossible, but also acts as a more effective engagement channel.

## Card Networks vs. Beam Today vs. Beam on Blockchain

The table below compares the features and benefits of Card Networks such as VISA, MasterCard to Beam's platform today and its future tokenised platform

	Card Networks (VISA, MasterCard etc.)	Beam Platform Today	Beam Platform Tokenised
<b>Merchants</b>			
Payment processing fee	2-3%	0%	0%
Insights (satisfaction, NPS, store analytics)	None	Rich	Rich <sup>1</sup>
Demand generation (rewards engine)	None	Proprietary	Smart Contract
Risk of fraud	High <sup>2</sup>	Medium	Low
Settlement	up to 3 days	Daily <sup>3</sup>	Instant
% returned to retail economy	0%	60%	70%
<b>Customers</b>			
Earn rewards (monetise data)	up to 2%	11% <sup>4</sup>	15%
Pay w/ cash & crypto in-store	None	None	Yes <sup>5</sup>
Forex transaction fees	3%	3%	None <sup>6</sup>
Data ownership	Multiple parties	Beam	Customer <sup>7</sup>
Control over data usage	None	None	Complete
<b>Network participants (e.g. Issuers, Acquirers, Local Partner) <sup>8</sup></b>			
Banking / Fin. Licence Required	Yes	No	No
Cost of entry as participant	min. \$3m	\$0	\$0
PCI Compliance	Level 1 or 2	None	None
Required to handle settlement	Yes	No	No
Incentive to join	No	No	Yes <sup>9</sup>
Issuer & Acquirer integration	Proprietary	APIs	Protocol
<b>Network / Platform</b>			
Revenue - Network / Platform	0.3% to 0.7%	16% <sup>10</sup>	1% to 2%
Revenue - Issuer	0.3% to 0.7%	None	2% to 14%
Revenue - Acquirer	0.3% to 0.5%	None	1% to 4%
Revenue - Local Partners	N/A	None	1% to 2%

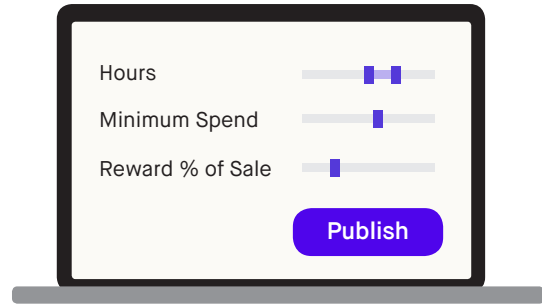
**1** Insights will extend to include additional "issuer" and "acquirer" data. **2** In most cases, the retail wears the fraud charge known as "chargeback". **3** Settlements are automatically executed based on the agreement with the retailer. **4** On average, a Beam user today earns 11% on every transaction outside grocery and fuel. **5** Customers will be able to top up their balances on Beam with cash or crypto wallets. **6** Stellar Network comes with built in decentralised exchange for crypto and fiat. **7** We will partner with an existing protocol to safely store user's transaction data with self ownership. **8** In the future, the type of participants on the network will be extended to data analytics, AI, machine learning companies. **9** POS vendors and stores joining Beam will earn BEAM tokens for each store. The sooner they join, the more tokens they earn. **10** Today, retailers outside grocery and fuel contribute 16% on average from every transaction into a rewards pool. In return, they receive real time customer insights and are able to measure ROI on their contribution in terms of new customers acquired vs. existing customers engaged etc. Going forward, this revenue is split between participants to increase usage and participation on the network and scale the network globally in the long term.

## A demand generation example supported on the Beam Platform today:

A merchant wishes to fill its unutilised capacity. The example is very simple and may be applied equally to a cinema or a fine dining restaurant.

The parameters of the Smart Value Contract are:

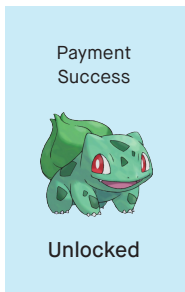
- Generate a sale between 2pm and 6pm from Monday to Thursday.
- The customer must spend at least \$20.
- Reward value: 30% of the sale



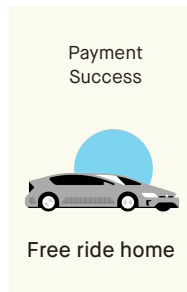
All apps that help the retailer fill its unutilised capacity automatically earn BEAM tokens as per the terms of the smart contract it is attached to. Participants then pass on the value they unlock to their users in a format relevant to them.

### For example:

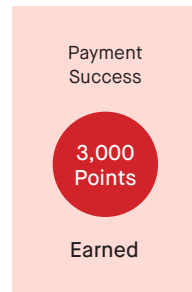
**Pokemon Go** incentivises a customer to go to the cinema to unlock new catches.



**Airbnb** takes the customer to a fine dining restaurant with free Uber ride home.



**Emirates** incentivises its customers to go to the cinema for additional points.



# Win Win Token Economy

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

## Stakeholders of retail value chain:

- Achieve the desired behaviour they have defined in their challenges
- Receive additional insights from transactions reinforcing of a positive feedback loop

## Network participants:

- Unlock the value attached to the smart contract of a given challenge
- Issuers unlock up to 70%, Acquirers and Local Partners up to 20% each (the split is determined by the amount of quantifiable value the participant creates for the network)
- A participant can generate up to 40% more revenue by holding 40% of its prior revenue in BEAM tokens. If it holds 20% of BEAM tokens from prior revenue, it generates 20% additional revenue from next transaction

## Customers:

- Earn monetary or intrinsic value from every transaction
- For example a gaming app may reward its user with a new level in its game; whereas uber may offer a free ride whilst foursquare simply rewards the user with monetary value
- Customers have the freedom to choose the apps they wish to use based on the value they perceive they get from a given app

## 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 BEAM token is linked to the total throughput processed on the network

## Token Economics

### 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 inflation for 5 years*
User classes**	ICO Participants, Local Partners, Retailers, Customers, Acquirers, Issuer Apps, Brands, Malls, Lenders etc.

### 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 immediate term, the utility value of BEAM Tokens are intended for ICO Participants, Local Partners, Retailers, Acquirers and Issuers. However, in the longer term, other participants such as Lenders, Big Data and AI companies etc. may also hold BEAM Tokens in order to gain access to the Beam Network.

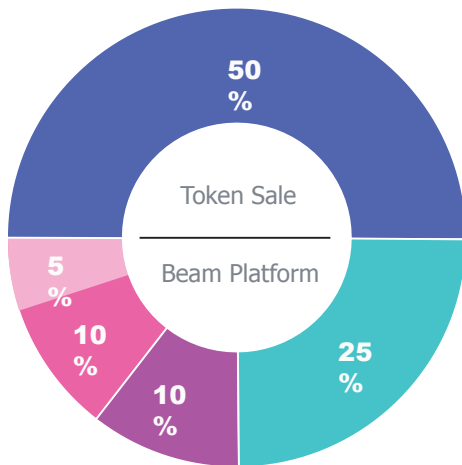


## Value of the BEAM Token for ICO participants

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

A Local Partner, Acquirer or an Issuer have good reasons to hold BEAM Tokens to provide services and generate revenues on the platform. However, depending on the price of BEAM Tokens and/or other internal reasons, rather than buying BEAM Tokens, a participant may choose to borrow BEAM Tokens. The tokens can be borrowed from any BEAM Token holder.

## Token distribution



## Utility value for Network Participants

For a participant to qualify as a Local Partner, it needs to hold BEAM Tokens based on a formula that takes into account the regional gross domestic production and the size of the population in its locality.

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

BEAM Tokens held by a Local Partner in addition to the minimum requirement is used to unlock additional revenue. Similarly, Acquirers and Issuers can also optionally hold additional BEAM Tokens to increase their revenue.

**For example:** a service provider joined the platform 12 months ago. Since then it generated \$100,000 gross revenue and held an average of \$20,000 of this revenue in BEAM Tokens. When processing its 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.

# Go to Market

Beam's existing integrations with POS systems and acquirer terminals currently make up a technical acceptance network in excess of 400,000 bricks and mortar stores worldwide. In other words, over 400,000 stores are already technically enabled to process Beam transactions. In Australia, Sweden and UAE over 5,000 stores are already live and accept Beam transactions. In the immediate term, we will focus on incentivising the 395,000 stores that are technically ready to process Beam transactions to activate Beam at their stores.

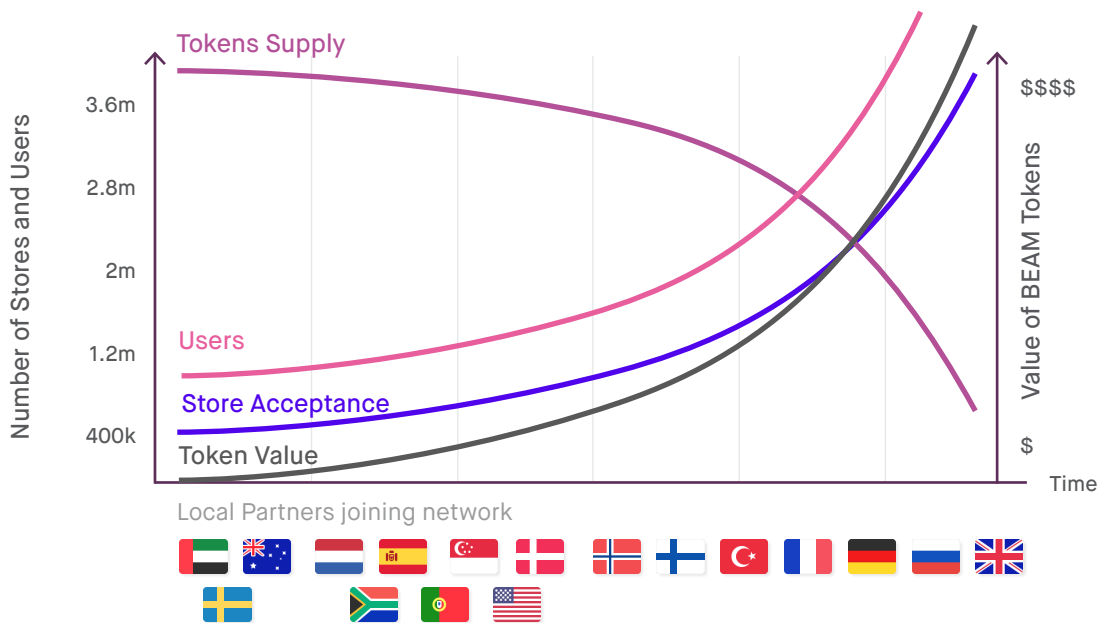
In the mid term, we will focus on growing the technical acceptance network as it represents one of the major prerequisites for Beam's success. Therefore, our primary focus in the next 18 months is to grow Beam's technical acceptance network to 3 million stores worldwide with at least 250,000 stores live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

In parallel, we will expand our Local Partner network in more cities globally. Currently, we have Local Partners in Australia, Sweden, UAE and we are in the final stages of expanding this network to include the Netherlands, Portugal, Spain, South Africa, Singapore and New Zealand. A key responsibility of a Local Partner is to onboard Retailers in its locality and grow the Beam Network.

To accelerate the expansion of Beam's acceptance network, we allocated 40% of all BEAM tokens to Network Development Fund. POS vendors, existing acquirer networks as well as retailers will earn BEAM tokens for every 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. And the presence of Retailers ensures enough stores accepting Beam in a given locality and there is enough monetary incentive for Issuer Apps to bring their Users to the network.



The value of BEAM tokens is designed to appreciate through the following mechanisms:

- Reduction of BEAM tokens in circulation as more Local Partners join the Beam Platform launching Beam in more countries/cities.
- Increasing the size of the acceptance network utilising the Network Development Fund. In addition, this will naturally attract more users to the platform increasing the transactions processed on the network.
- Every transaction on the platform results in participants automatically buying BEAM tokens off 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 execute independently of the other, collectively they are designed to amplify the effect of the other.

## Administration



**Natalia Catarina**  
CEO



**Rúben Teixeira**  
CTO e COO

## Beam Team



**Beam Team**



**Legal Department**

## Advisor



**Luís de Matos**



**José Serrão**



**António Lourenço**

## Advisor



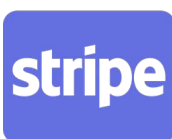
**AWS**  
**Amazon Web Services**  
aws.amazon.com

Amazon Web Services, Inc. is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs



**ETHEREUM**  
ethereum.org

Ethereum is a decentralized blockchain with smart contract functionality. Ether is the native cryptocurrency of the platform



**STRIPE**  
stripe.com

Stripe, Inc. is an Irish-American multinational financial services and software as a service company



**Google**  
google.com

Google is an American multinational corporation and technology company focusing on online advertising, search engine technology, cloud computing, computer software, quantum computing, e-commerce, consumer electronics, and artificial intelligence.

