

Dawning of a new Era



AutoTrader

Migration to Public Cloud



Dave Whyte
Operations Lead
[@DaveWhyte_DW](https://twitter.com/DaveWhyte_DW)



Russell Warman
Head of Infrastructure and
Operations
[@rjwarman](https://twitter.com/rjwarman)

Auto Trader group plc is the UK's largest digital automotive marketplace

- 55m cross platform visits each month
- FTSE 100 Company
- £355.1m Revenue - Market Cap £5.5bn
- 831 Employees
- 212 Developers
- 27 Infrastructure & Operations

[Home](#) / [Buying](#) / [Search Results](#)

ClickTravel

Travel Management Platform

Corporate Travel Platform
Helping You to Love
Business Travel Again

**495,745 cars found**[Save search](#) [Reset](#)

Distance (national) ▾

wn23ss

Make Any ▾

Model Any ▾

Model Variant Any ▾

Only show new car deals

Price Any ▾

[Total price](#) [Monthly price](#)

From (any) ▾

To (any) ▾

Finance examples for HP and PCP will be returned if available, based on 48 month term, £1,000 deposit and 10,000 miles per year. Finance subject to status.

Year Any ▾

[Select a year](#) [Brand new](#)[All](#)[New](#)[Used](#)

Sort by: Sponsored adverts first ▾

Featured listing

24

**Vauxhall Mokka Hatch 1.4 140 Tech Line S/s****1****£9,499****£224**
per month (HP)
finance example

Fakenham - 151 miles away

[Get an insurance quote](#) | [Check its history](#)**Suzuki Grand Vitara 1.6 SE Estate 3dr Petrol Manual (193 g/km, 92 ...)****£150**

Spares or repairs MOT Failure

2002 (52 reg) | SUV | 121,000 miles | 1.6L | 92bhp |
Manual | Petrol

Here we have a Suzuki Grand Vitara GV1600 SE, the overall condition is very good ...

Trade seller - See all 12 cars
Clevedon - 145 miles away**SCRAPPAGE**
— UP TO £2,500 ALLOWANCE —[VIEW OFFER](#) ▶

The Power to Surprise

[TERMS](#)

AutoTrader Car Live Stock

All New

Ever 3-Year Year Month Week



A simple way to buy brand new

We're clearing the noise to help you find your new car

3

New Car

Search new cars

Within 50 miles

Make

Model

Budget

[Search 7,425 cars](#)

Drive away today



There are thousands of brand new cars in stock and available right now.

Pre-haggled prices



We'll display the dealer's discount upfront to save you time and money.

Made to order



Build your dream car in minutes, then order it online from your local dealer.

Video time





Magazine
Company

https://www.autotrader.co.uk

Cars Prestige cars Vans Bikes Motorhomes

AutoTrader Buying new & used

New & used cars

WN2 3SS Distance (national)

Digital Company

Total price Monthly price

Min Price Max Price

Search 501,917 cars

Reset search More options

Latest brand new car deals

Chipping Sodbury MOTOR COMPANY Ford

RRP £34,095 Save £1,100

RRP £13,580



Technology
Company

Now

Where we are...

2
physical
data
centers

3
public
clouds

375
apps in
total

226
apps deployed
in the public
cloud

99.99

%

availability of Auto
Trader search during
FY19 (Apr 18 – Apr
19)

15000

releases to
live in FY19

455

Live
releases
in one day

99.79

%

release
success
rate





Why Public Cloud?

Culture
Org Agility
People

**YOUR CULTURE
IS YOUR BRAND**

To **lead** the digital future of
the UK automotive
marketplace

Our Core Values

Humble



Curious



Courageous



Determined



Reliable



Community-
Minded



Our Principles

OVERRIDING PRINCIPLE*	OVER	OVERRIDING PRINCIPLE
Achieving our Mission	OVER	Short Term Financials
OPERATING PRINCIPLE*	OVER	OPERATING PRINCIPLE
Efficiency & Excellence	OVER	ROI Hunger
Simplicity	OVER	Sophistication
Product Evolution	OVER	Project
Completion	OVER	Initiation
People Development	OVER	External Hires & Contractors
BEHAVIOURAL PRINCIPLE*	OVER	BEHAVIOURAL PRINCIPLE
Collaboration	OVER	Competition
Empower & Trust	OVER	Process & Control
Relationship	OVER	Transaction
Value & Learning	OVER	Hierarchy & Status

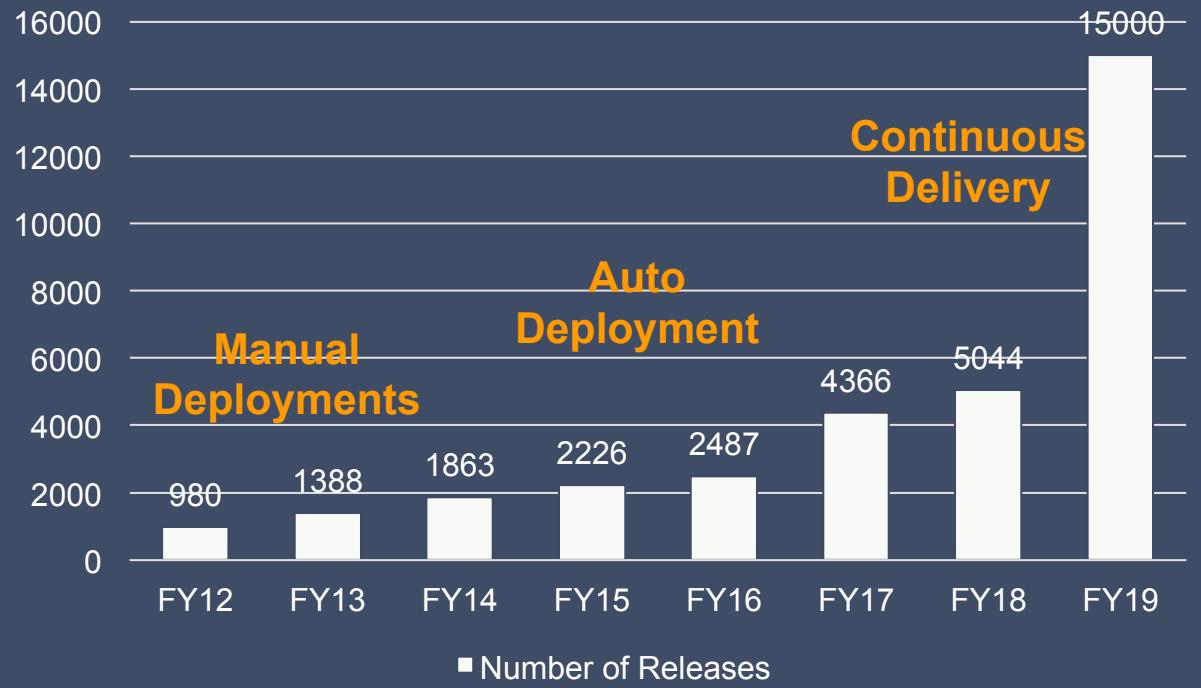


The background features a blurred city skyline at sunset, with numerous binary code digits (0s and 1s) streaking across the scene in various colors (blue, green, yellow, red).

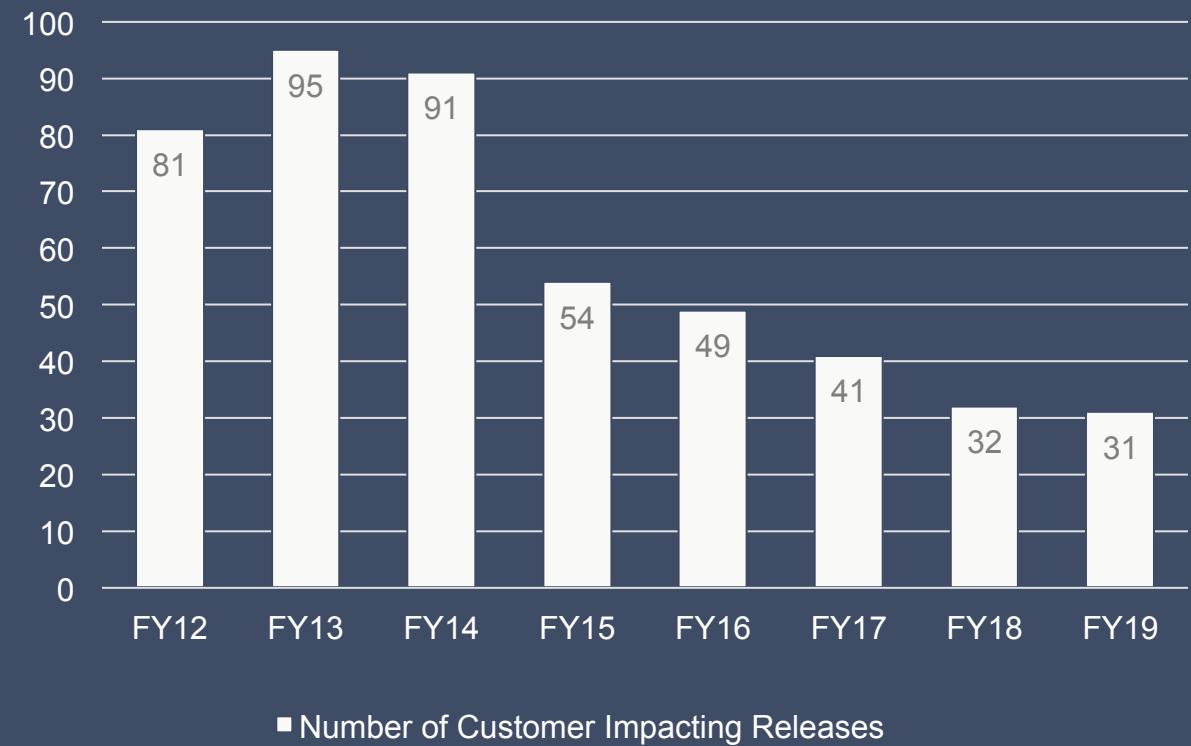
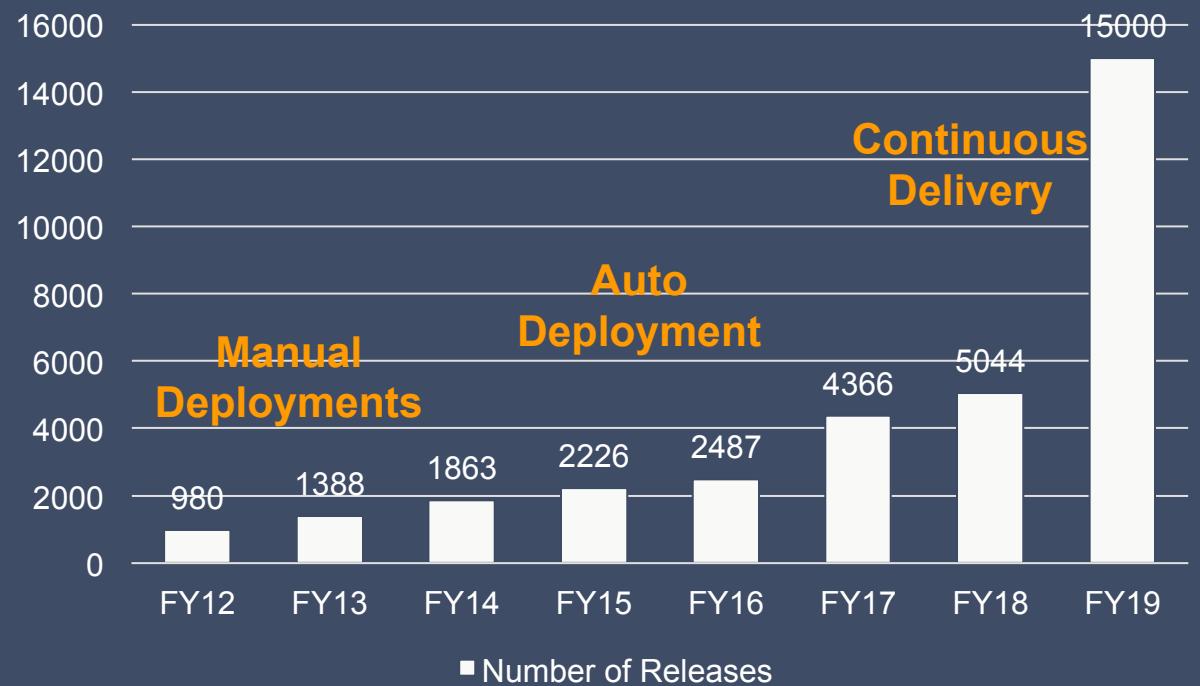
Org Agility

“Blockers to Enablers”

Improving organisational agility



Improving organisational agility





Completed 153 releases today

sauron-web 16:42 1m 48s

sauron-web-showcase 16:38 2m 43s

sauron-web-partners 16:34 2m 15s

sauron-new-car-landing-page-app 16:32 1m 19s

engaae 16:26 7m 4s

search-one 16:24 1m 31s

sauron-new-car-landing-page-app 16:18 1m 17s

sauron-web-mobile 16:15 1m 51s

data-platform-dbt-docs-service 16:14 47s

sauron-web 16:03 1m 47s

sauron-web-showcase 16:00 2m 29s

searchone-server 15:55 52m

OK to release ?

Yes

In progress

data-platform-dbt-docs-service 29s



Completed 153 releases today

sauron-web	16:42	1m 8s
sauron-web-showcase	16:38	2m 43s
sauron-web-partners	16:34	2m 5s
sauron-new-car-landing-page-app	16:32	1m 19s
engage	16:26	7m 4s
search-one	16:24	1m 31s
sauron-new-car-landing-page-app	16:18	1m 17s
sauron-web-mobile	16:15	1m 51s
data-platform-dbt-docs-service	16:14	47s
sauron-web	16:03	1m 47s
sauron-web-showcase	16:00	2m 29s
searchone-server	15:55	52m 28s
data-platform-dbt-docs-service	15:53	46s

OK to release ?

Yes

In progress

data-platform-dbt-docs-service

29s

SERVICE DISCOVERY

Dev

Preprod

Prod (226)

EXTERNAL LINKS

Service Mesh Dashboard

Network Policies

Platform Documentation

Google Cloud Console

Heads up! This dashboard queries our platform directly to dynamically list services, to ensure your service is listed, please follow [this guide](#).

Search

Squad

Language

Service Tier

PHATS Version

Application

abtest-allocator consumer-experience  ey@autotrader.co.uk tier: 3

A/B Test Allocator for Sauron

type: java

Jump to ▾

advertisements-alerts dealer-auction  owner@dealeerauction.co.uk tier: 3

Processes advertisements from users to suitable vehicles.

type: java

Jump to ▾

advert-price-history-processor customer-tools-and-billing  s@autotrader.co.uk tier: 3

Kafka state store which consumes from stock-item and produces price-history-update, which is consumed by forecast-service & searchone

type: java

Jump to ▾

advertise-on-autotrader-ie carzone  n@autotrader.co.uk tier: 3

Consume adverts from Kafka to autotrader.ie

type: java

Jump to ▾

advertising-manufacturer-agency creative-design  iton@autotrader.co.uk tier: 3

Micro site for the marketing team for advertising and manufacturing agencies.

type: nodejs

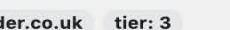
Jump to ▾

advertising-preferences-service customer-tools-and-billing  thy@autotrader.co.uk tier: 3

This app will persist preferences chosen by customers during the advertising journey

type: java

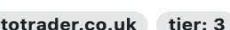
Jump to ▾

airflow data-engineering  @autotrader.co.uk tier: 3

Airflow is a platform to programmatically author, schedule and monitor workflows as directed acyclic graphs (DAGs) of tasks.

type: python3.6

Jump to ▾

api-admin consumer-experience  r@autotrader.co.uk tier: 3

Admin tool for configuring API Gateway for publishing Auto Trader APIs.

type: java

Jump to ▾

api-support customer-tools-and-billing  thy@autotrader.co.uk tier: 3

Tool to support customer API applications and more

type: java

Jump to ▾

SERVICE DISCOVERY

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Processes adverts to alert users to suitable vehicles

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Kafka state store which consumes from stock-item and produces price-history-update, which is consumed by forecast-service & searchon

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Jump to ▾

Tool to support customer API applications and more

type: java

Jump to ▾

app.abtest-allocator

admin.abtest-allocator

GoCD Pipeline

GoCD VSM

Git Source Code

Service Metrics

Jaeger Tracing

Logs

Metrics: JVM

type: java

Jump to ▾



Skippr APP 3:37 PM

[forecourt-service] Service returning high amounts of 5xx codes

A percentage of requests to this service are returning 5xx error codes. Please check the application logs to understand the root cause of the errors.

Firing

- ingress-nginx-internal

Critical Alert

@opsengineers - this is a critical alert

Service Owner

@paul.nunnerley from "customer-tools-and-billing"

Severity: critical, Environment: prod | Jun 21st

Runbook

Owned by paul.nunnerley

Silence Alert



2 replies

Last reply 2 days ago



Skippr APP 2 days ago

There has been a deployment in the **forecourt-service** namespace in the last 30 minutes 😕 - it might be worth checking it out.. You can see the GoCD VSM here:

https://go.atcloud.io/go/pipelines/value_stream_map/shippr-cli.forecourt-service/290. The Git tree that was deployed can be seen here:

<https://github.atcloud.io/AutoTrader/forecourt-service/tree/3809a19c372994d76c9a9e2c1ac6f8bc39d1e7ca>



Skippr APP 2 days ago

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<https://github.atcloud.io/AutoTrader/forecourt-service/tree/3809a19c372994d76c9a9e2c1ac6f8bc39d1e7cc>



Paul Nunnerley 2 days ago
Rolling back

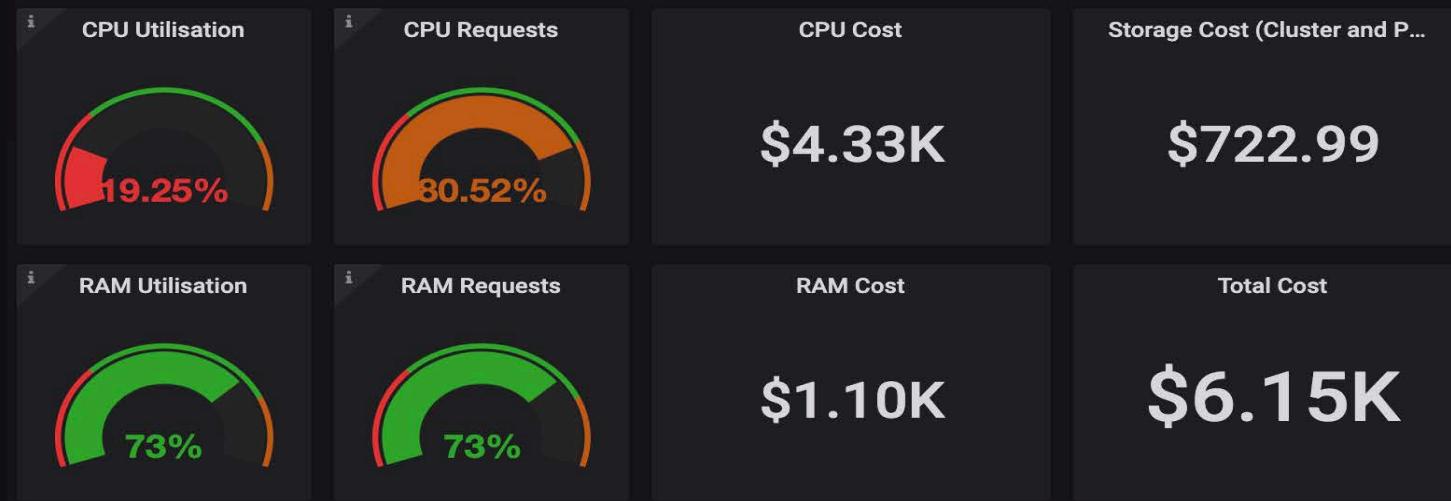
app forecourt-service ▾

svc app ▾

Deployment Job Started Job Succeeded  Dev  Preprod  Prod  Tracing  Inf Stats  DB Stats  Envoy Stats

	infrastructure / Analysis by Cluster	⋮			Last 30 minutes		
CPU	17.78 ⋮	PE CPU	5.35 ⋮	RAM	2.38 ⋮	PE RAM	0.72 ⋮

Breakdown by Node



Cluster Node Utilisation by CPU and RAM requests		
Node ⋮	CPU Requests	RAM Requests
gke-delivery-platform-solr-20190401-e55a6a5d-q03h	90.84%	29.95%
gke-delivery-platform-solr-20190401-bf38b009-j69g	90.53%	29.73%
gke-delivery-platform-solr-20190401-b220ff99-k5zp	91.79%	30.94%
gke-delivery-platform-normal-20190401-f7b26b00-nzph	82.02%	89.22%

Breakdown by Namespace

Namespace cost and utilisation analysis						
Namespace	CPU	CPU Utilisation	RAM	RAM Utilisation	Storage	Total ⋮
search-solr	\$534.06	6.50%	\$45.35	90.17%	\$152.97	\$732.38
kafka	\$177.42	34.56%	\$36.96	81.47%	\$243.10	\$457.48
istio-system	\$189.49	21.37%	\$24.52	48.76%	\$47.87	\$261.88
vehicle-metric-service	\$199.14	14.54%	\$6.96	65.64%	\$0	\$206.10
forecourt-service	\$189.93	21.98%	\$13.05	91.40%	\$0	\$202.97
kube-system	\$175.85	7.96%	\$15.75	58.92%	\$0.13	\$191.74
core-system	\$124.96	37.32%	\$23.57	35.82%	\$0.92	\$149.45
ingress-nginx	\$108.28	18.23%	\$11.08	37.91%	\$0	\$119.36
vehicle-valuations-service	\$102.68	17.40%	\$6.44	74.16%	\$0	\$109.12
search-one	\$89.61	11.52%	\$13.74	79.67%	\$0	\$103.36

Persistent Volume Claims			
Namespace	PVC Name	Storage Class	Cost ⋮
istio-system	data-prometheus-0	platform-ssd-regional	\$47.87
search-solr	solr-data-solr-0	platform-ssd	\$47.87
search-solr	solr-data-solr-2	platform-ssd	\$47.87
search-solr	solr-data-solr-1	platform-ssd	\$47.87
kafka	kafka-data-kafka-3	platform-ssd	\$46.75
kafka	kafka-data-kafka-1	platform-ssd	\$46.75
kafka	kafka-data-kafka-4	platform-ssd	\$46.75
kafka	kafka-data-kafka-0	platform-ssd	\$46.75

People





How to bridge the gap?



A photograph of two men standing side-by-side, smiling. The man on the left has short blonde hair and is wearing a white long-sleeved shirt. He is wearing a black lanyard with an AutoTrader badge and a white name tag that says 'Brett'. The man on the right has brown hair and a beard, and is wearing a black t-shirt with a graphic that includes the text 'N°49', 'LNNH', 'AutoTrader', 'London's Good', 'OLD STREET EC1', and a small 'Hatch' logo. He is also wearing a black lanyard with an AutoTrader badge. They appear to be at a professional event.

Open
conservations

On a Journey Together



Quote 1

“I've been a network engineer at Auto Trader for 12 years. Manually making changes to switches, routers and other network kit is what I knew. I was initially worried about Auto Trader moving to the public cloud, onto managed networks.

Is there going to be a job for me anymore?

The short answer is yes. Moving our workloads to the public cloud has enabled me to massively expand my skillset and learn a different way of working and has enabled me to become a more well rounded network engineer”

Chris McKean – Senior Network Engineer

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Quote 2

"Deployment pipelines are **simple** and being **super-fast is amazing**, going from **an hour and a half** to trigger the 7 pipelines pushes to deploy a **tiny fix** to

2 minutes, 1 click...totally ace!

Having the platform dashboard and the JVM & Service stats just simply available **out of the box** is excellent and gives us **90%** of our monitoring requirements **as a default** which is **super.**"

Shaun Storey - Stock & Search Platform Tech Lead

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Summary...



Culture

Culture, culture, culture! The right culture is an important **key to success** - your culture is **your brand** and its **essential** that its bought into at **all levels**



Org Agility

Go from '**Blockers to Enablers**'. Be **bold** and **courageous** around quest for continuous improvement. Release **less** more **frequently**. Empower your teams to **self serve**



People

Your employees are your most **important assets**, empower them to be part of the journey

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People

Your employees are your most **important assets**, empower them to be part of the journey

We need your...

...collaboration

Get involved and support
your local

DevOps Meetups

share



stories

