

A photograph of a winding asphalt road curving through a lush, green landscape. The road is marked with white dashed lines and yellow vertical markers. In the background, there are rolling hills and mountains under a sky filled with soft, greyish-blue clouds.

THE CONTINUOUS JOURNEY FROM A SOFTWARE DEVELOPER'S PERSPECTIVE

ADAM BERES DEAK (AUTOSCOUT24)

photo: Dardan Mu



10 million users per month and more than 2.4 million vehicle offers – AutoScout24 is the largest online car marketplace in Europe. With a market presence in 18 countries and more than 55,000 associated dealers, AutoScout24 is represented in all important European markets.

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A close-up photograph of a white ceramic bowl filled with several brown eggs. The bowl is positioned in the center of the frame, with its rim curving upwards towards the top. The eggs are nestled closely together, their smooth, rounded surfaces catching some light. The background is a dark, solid color, which provides a strong contrast to the white bowl and the brown eggs.

WHERE ARE WE COMING FROM?

photo: Brina Blum

WHERE ARE WE COMING FROM?

Ca. 6 years ago we had

- ... a few monolithic ASP.Net/C# projects
- ... ca. 10 engineering and operations teams
- ... ca. 2000 servers in own datacenter
- ... continuous integration pipelines (TeamCity, ~4 stages)
- ... automated unit tests and browser tests
- ... a lot of manual testing
- ... from commit to release in under an hour (sometimes)
- ... some projects were released (almost) daily



photo: Samuele Errico Piccarini

WHERE ARE WE NOW?

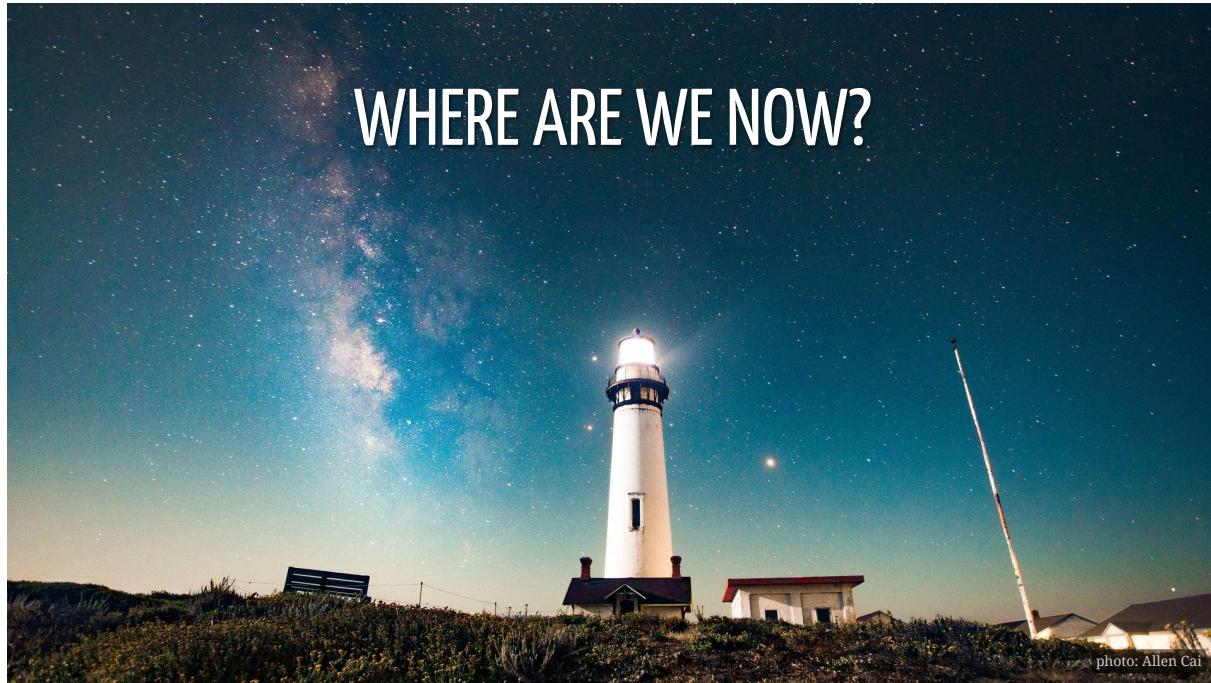


photo: Allen Cai

WHERE ARE WE NOW?

- ... ca. 30 independent teams
- ... large number of (micro) services
- ... polyglot architecture (Node.js, Scala, JVM, static pages)
- ... teams are responsible for their infrastructure + code + features
- ... teams release independently of other teams
- ... in the cloud

YOU BUILT IT - YOU RUN IT!

The team is responsible for implementation and operation of the service

No more throwing over the fence

EMBRACE THE CLOUD

Wide range of services - database, computing, networking, streaming, etc.

Scales well for low and high demand

photo: ANDRIK LANGFIELD PETRIDES

MANAGED SERVICES

Our principle: prefer managed services over self-hosted

Teams are more independent

Teams can choose technology more freely

E.g. no integration on the database level

No need to take care of the hardware



photo: Chris Liverani

COST AWARENESS

- Cost is not hidden anymore
- Cost can be estimated in advance
- Cost is monitored on a service level

MTBF VS MTTR

Mean Time Between Failures vs. Mean Time To Recovery

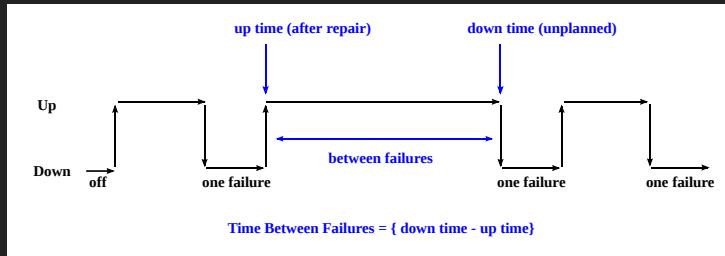


photo: Wikipedia

INFRASTRUCTURE AS CODE

photo: Mike Wilson

FEATURE TOGGLES

Every commit can go into production

No feature branches

We ship inactive code

Can be enabled on a request/user/language basis

```
if (toggle('shiny-new-feature').isOn) {  
    // make the World a better place  
} else {  
    // let the World stay as it was before  
}
```

OPS TOGGLS

e.g. ads can be switched off if they are causing problems

```
if (opsToggle('ads').isOn) {  
    showAds();  
}
```

A/B TESTING

CONTINUOUS INTEGRATION AND DEPLOYMENT



photo: chuttersnap

CONTINUOUS INTEGRATION AND DEPLOYMENT

Infrastructure as code

Master branch based development

Feature toggling

Most teams not just do CI but also CD

Contributions from external teams through Pull Requests



A. Sharif @sharifsbeat · Mar 7

I see a lot of bikeshedding going on when it comes to #agile.

Mostly miss the empowerment aspect.

Empower the development team to have a say in the product and how they want to work - feature factories, post-its, stand-ups, how to run retrospectives etc. are just details.



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Replying to @sharifsbeat

Agile without empowerment is just waterfall
with more meetings...

3:28 AM - 7 Mar 2018

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POWER TO THE TEAMS

photo: American Public Power Association

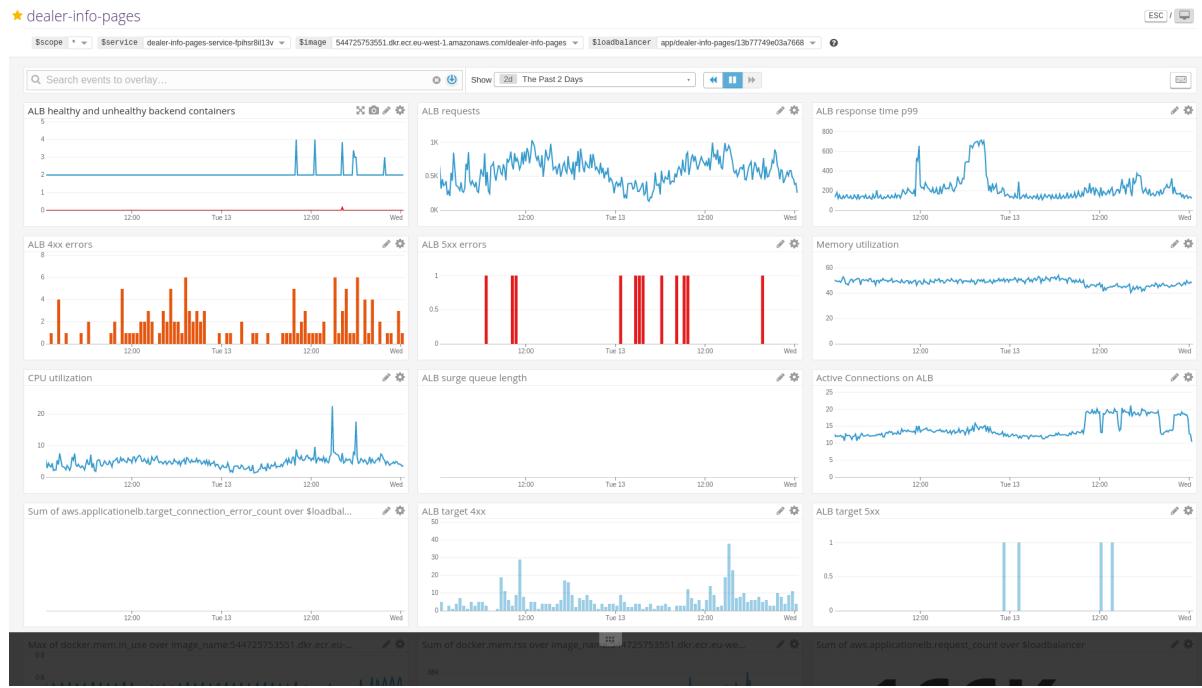


photo: Jair Lázaro

CloudWatch and DataDog for monitoring and dashboards

OpsGenie for alarming

Every team has on-call duty for their services



INCIDENT HANDLING

fix the error vs. bring back the system to a healthy state
on-call duty and free hunting

photo: Denys Argyriou

UNEXPECTED PRODUCTION CHANGE

AWS CloudTrail

Monitoring that no manual changes are done to our production environment



TAKE AWAYS

photo: Pete Bellis

TAKE AWAYS

- Embrace the cloud
- Power to the teams
- Make deployments a "no-brainer"
- Have good monitoring and alarming

Slides: bit.ly/2pfkHdO

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