

# Dutch Railways Scaled DevOps Journey

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# Introduction

Ard Westerik

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# Dutch Railways at a glance



1.2 million  
train journeys every day



17 billion passenger  
kilometres every year  
*410,000 times round the earth*



9 million people travel on  
NS trains every year



Amsterdam Centraal:  
165,000 passengers  
every day



6,830 kilometres of  
railways  
'from Utrecht to Tibet'



26.000 employees: 3,430  
train drivers  
and 2,950 conductors,  
1,500 IT staff

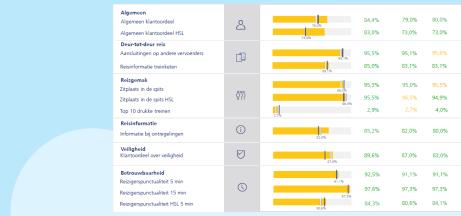


Revenue: € 5 bln  
Profit: €120 mln



The world's busiest rail  
networks  
1. Netherlands  
2. Switzerland  
3. Japan

# Dutch Railways: ambitions, challenges & the role of IT



## NS six-monthly figures: Passengers more often on time and more satisfied

- Van Boxtel: sustaining performance will be a major challenge
- Customer satisfaction rises to 84%



By 2040 the number of  
travellers will have  
increased by 27–40 %

ProRail-baas Eringa: veel meer treinen nodig

## “Public transport will get stuck”

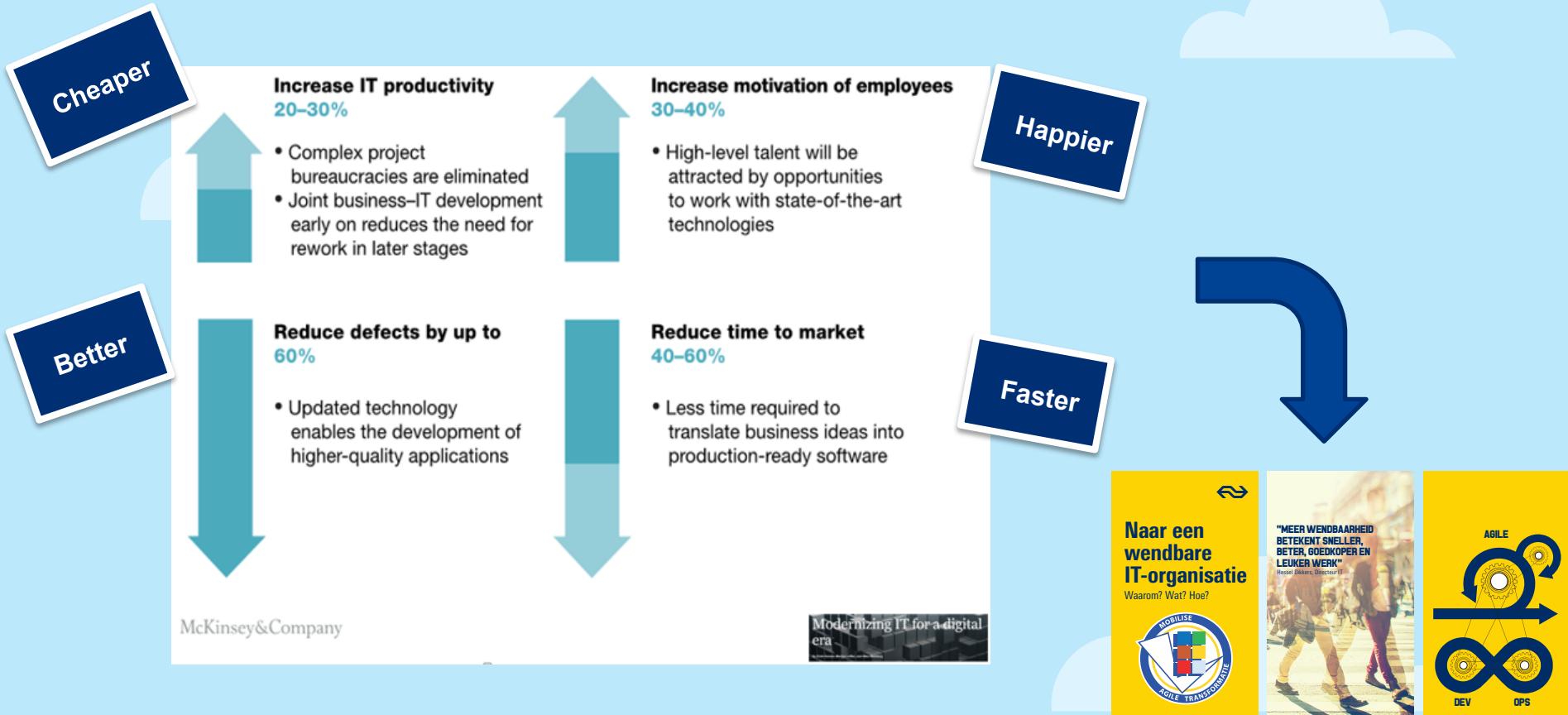
Door PAUL ELDERING  
31 mei 2018 in BINNENLAND

UTRECHT - Het openbaar vervoer in Nederland dreigt komende jaren vast te lopen, omdat er te weinig treinen zijn om de explosieve groei van reizigers op te vangen. De nieuwste prognose is een stijging van 45% tot 2030.



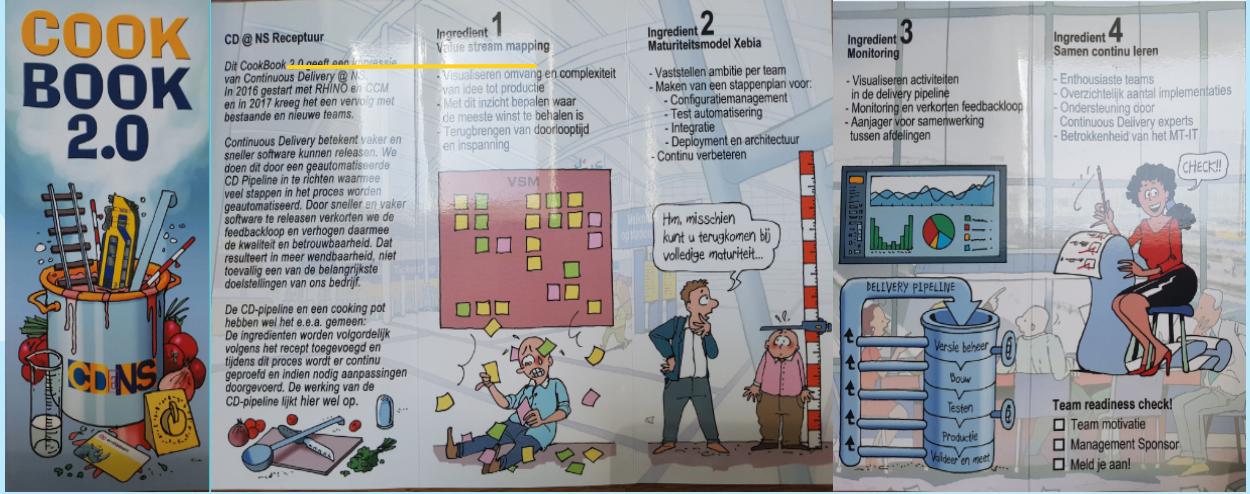
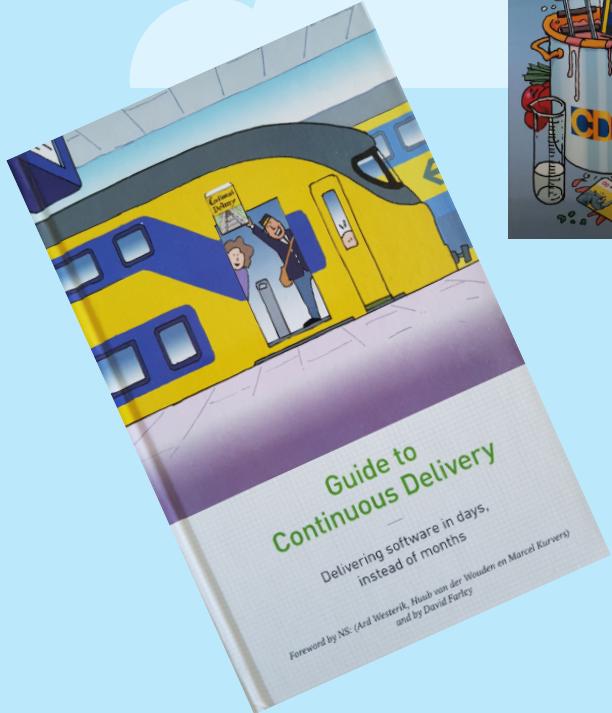
Nederlands spoors net volgens ProRail nagenoeg vol door hogere bezetting

# The Goals of NS-IT 2020 focus on Agility and DevOps





Start of the  
Journey



## Value Stream Maps (VSM)

## Maturity Model

## Feedback Loops

## Continuous Learning



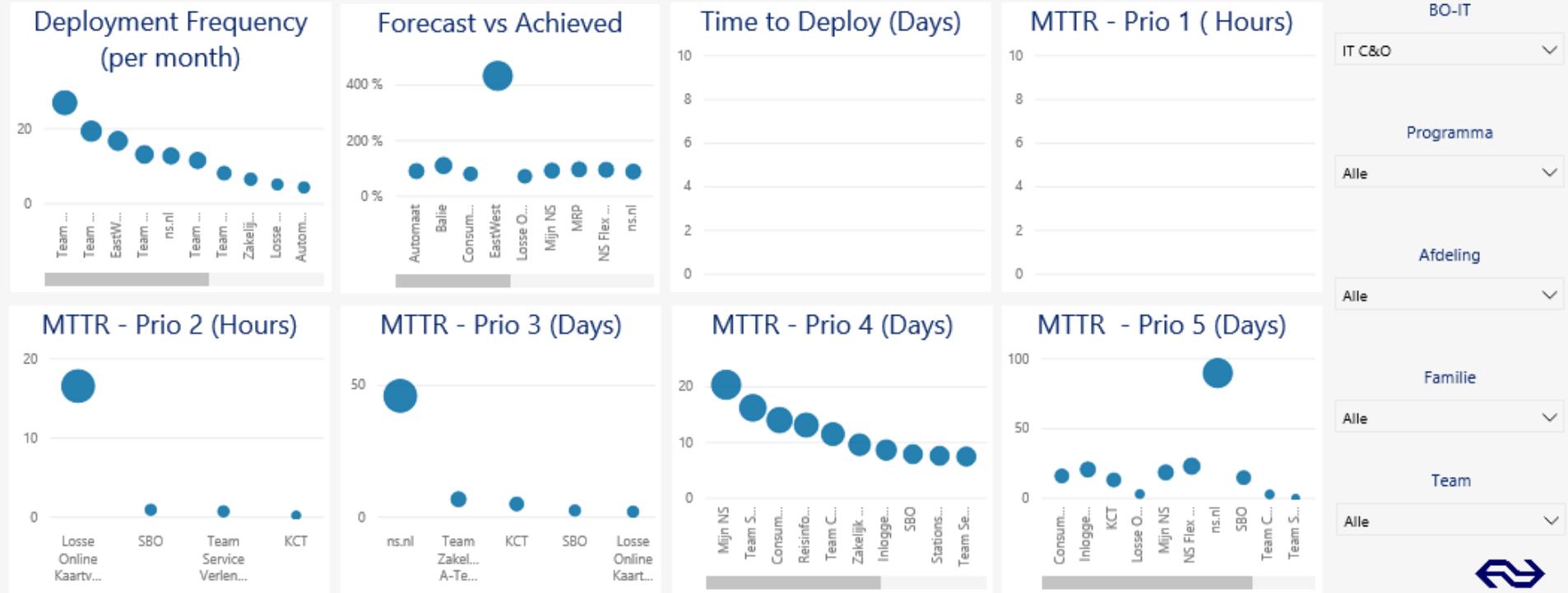
## # DevOps teams



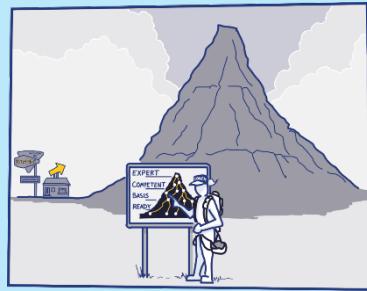


2019:  
DevOps Playbook  
DevOps Maturity  
Dashboard

Totaal aantal teams: 28



# 2019: DevOps Team Journey



# DevOps Service Portal

DevOps Service Portaal Jan Jansen

Team dashboard

**Playbook**

Basis ★ 100%  
Competent ★★★ 59%  
Expert ★★★★

**Maturiteit**

**Snel regelen**

- > Service Now
- > Topaas
- > Test Competence Center
- > Power BI
- > Introductie DevOps Service Portaal
- > Nieuw team aanmaken

**Impediments**

- > Play 1. Samenwerken
- > Play 1. Samenwerken
- > Play 3. Configuratiemanagement

**Team: Borden & Omroep**

**Teamleden**

- Ben Benson (Product owner)
- Saskia Sasberg (Scrum master)
- Karl Karelse (Teamlid)
- Johanna Jonassen (Teamlid)

**Ambitie**

Default text: 16px / 25px.  
Teamambities en doelstellingen voor de projecten en werkzaamheden.

**Coaches**

- Kees Korte (Coach)
- Maaike Master (Coach)

**Teamgegevens**

IT Operatie Materieel & Onderhoud Service Organisatie Onderhoud en Service

**Product**

Maximo

DevOps Service Portaal Jan Jansen

Team dashboard Playbook Maturiteit Kosten Incidenten Team: Borden & Omroep Meer informatie over playbook >

**Playbook**

**1. Samenwerken**   
De teamomming, team heeft gezamenlijke KPI's (Dev & Ops) en werkt samen aan het realiseren van productiviteit  
Basis ★ 82%  
Competent ★★★ 84%

**2. Meten en transparantie**   
Dashboard, KPI-set, Reporting, Kosten (Opes/ Capex)  
Basis ★ 100%  
Competent ★★★ 84%

**3. Configuratiemanagement**   
Code management, artefact management en configuratie management  
Basis ★

**4. Operations**   
Operatieneel beheer, Tactisch Beheer, Non-Functional, Monitoring, Service Level Agreement  
Basis ★

**5. Automated Provisioning**   
Automatisering en feedback  
Basis ★ 100%  
Competent ★★★ 100%  
Expert ★★★★ 23%

**6. Continuous Integration**   
Pipeline automation, kwaliteit en feedback  
Basis ★ 82%  
Competent ★★★ 49%  
Expert ★★★★ 23%

**7. Test Automation**   
Functioneel, niet-functioneel en feedback  
Basis ★ 22%  
Competent ★★★ 100%  
Expert ★★★★

**8. Automated Deployment**   
Automated deployment en feedback  
Basis ★ 36%  
Competent ★★★ 100%

**9. Architectuur**   
PSA, Onkoppeling, Microservices, Architectuurbeleid, Standaard Bouwblokken, Architectural Debt  
Basis ★

**10. Informatieveiligheid**   
De teamomming, team heeft gezamenlijke KPI's (Dev & Ops) en werkt samen aan het realiseren van productiviteit  
Basis ★ 22%  
Competent ★★★ 100%

**11. Onboarding**   
Dashboard, KPI-set, Reporting, Kosten (Opes/ Capex)  
Basis ★

**12. Platformen**   
Code management, artefact management en configuratie management  
Basis ★





LEARNINGS  
from our  
Journey.

# Learnings from our DevOps Journey

Speed of transformation in our enterprise influenced by:

- Leadership - DevOps & Agile is not about numbers
- CI/CD is a driver for changing behavior in our teams
- DevOps is a driver for changing behavior between our teams
- Ownership of the subject: Dev or Ops or Arch, or...?
- Leadership - Impediment management

Tell them WHY  
be patient  
and get surprised

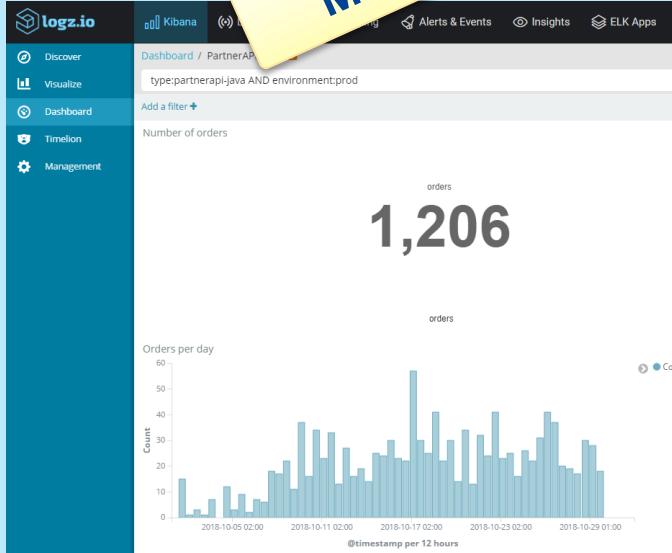


**Increased  
business  
VALUE!**

# Example of Results

API's create a new business model improving profitability

A mobile application interface for train tickets. At the top, there's a camera view of a yellow train at a station. Below it, a section titled "Your tickets" shows a "Train ticket" for a single ticket. A blue "Buy" button is visible. The text "MVP & hypotheses" is overlaid on the right side of the screen. In the bottom right corner, there's a line chart with three data series: "iDeal" (blue), "CreditCard" (green), and "Other" (red). The x-axis shows dates from October 15 to 28, 2018. The y-axis ranges from 0 to 12K. The "iDeal" series starts around 5K, dips slightly, then rises to about 8K. The "CreditCard" series remains very low, near zero. The "Other" series starts at 8K, peaks at 12K on October 19, dips, then rises again to about 9K by October 26.







Thank you for  
your  
attention.

Any  
questions?