Introductions

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ING is a global financial service provider servicing more than 35 million customers. In the Netherlands we are the banking sector market leader with over 8 million retail customers.
Mobile Banking used by 3.5 million customers who generate 4.4 million log ins per day.

Internet Banking used by 6.1 million customers who jointly log in 1.4 million times a day.

17,400 machines are spread over 2 data centers and use 14 PB of storage.
Why do we need to improve the reliability of our services?

Availability Report of 2017

<table>
<thead>
<tr>
<th>Service</th>
<th>Availability</th>
<th>Change</th>
<th>Incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Banking Retail</td>
<td>99.72%</td>
<td>0.19%</td>
<td>0.09%</td>
</tr>
<tr>
<td>Mobile Banking Retail</td>
<td>99.65%</td>
<td>0.22%</td>
<td>0.14%</td>
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Within ING we have a number of challenges related to our reliability that we want to solve through SRE

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
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<tr>
<td>Our centralized monitoring solutions sometimes encounter scalability and availability issues.</td>
<td>Teams are not in control of monitoring solutions and cannot fix it when broken.</td>
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<td>Our centralized alerting solution is unreliable and does not send alerts directly to BizDevOps teams.</td>
<td>It takes too long for an alert to reach the right team: on average we need 69 minutes before an engineer starts working an incident resolution.</td>
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<td>Teams do not always measure availability from a white box monitoring perspective.</td>
<td>Teams are not always aware of their services’ performance and cannot take full responsibility for run.</td>
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<td>The same incidents occur multiple times and we do not follow up on incidents enough.</td>
<td>We do not learn enough from mistakes made – we have yet to become a learning organization.</td>
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<td>Our engineers spend more time on completing documents than coding.</td>
<td>We prove we are in control with documents, not by checking the actual state of our code in production.</td>
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We have adopted the Spotify model and work in Tribes composed of BizDevOps squads: our SRE team is positioned centrally within NL as a silo.
Our SRE team enables engineering teams through delivery of tooling, facilitation, consulting and education

We educate others about SRE during demos and we develop training materials.

We facilitate the creation of more SRE teams and ask them to join our SRE community meetings with the other NL-based SRE teams.

We are not on call: BizDevOps teams are responsible for their own build and run.

We facilitate BizDevOps squads during post mortems and consult whenever our help is needed in fixing or identifying reliability issues.

We build tooling to enable BizDevOps squads. At the moment we focus on Prometheus (alerting, white box monitoring and traffic modeling) and Mattermost (ChatOps).
We aim to reduce our time to repair through engineering by improving our monitoring with Prometheus and introducing ChatOps with MatterMost.
## Our learnings after two years of SRE at ING

### People
- Never compromise on mindset in hiring SREs.
- Assign a PO to protect team focus on engineering and to spread the SRE love.
- Consider what mix works well for you in terms of new and existing hires, or think about possibilities of SRE internships.

### Process
- Test if SRE works for you by doing a pilot phase.
- Have a vision on your definition of SRE as a team, define a roadmap together.
- Learn from others through online resources, at conferences or company visits.
- Prepare to spend time explaining and promoting SRE and your tooling.
- Beer o’clock is great for team bonding.

### Technology
- Make it attractive for others to use your tooling: take away pain from teams, incorporate your tooling in widely used frameworks, find quick wins.
- Productization takes time, a lot of time. Don't underestimate this.
- Consider scalability and ownership in your tooling strategy.
Questions?