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OUR ROAD TO ZERO PLANNED DOWNTIME

By Kidbrooke & Axians

VINCI ENERGIES

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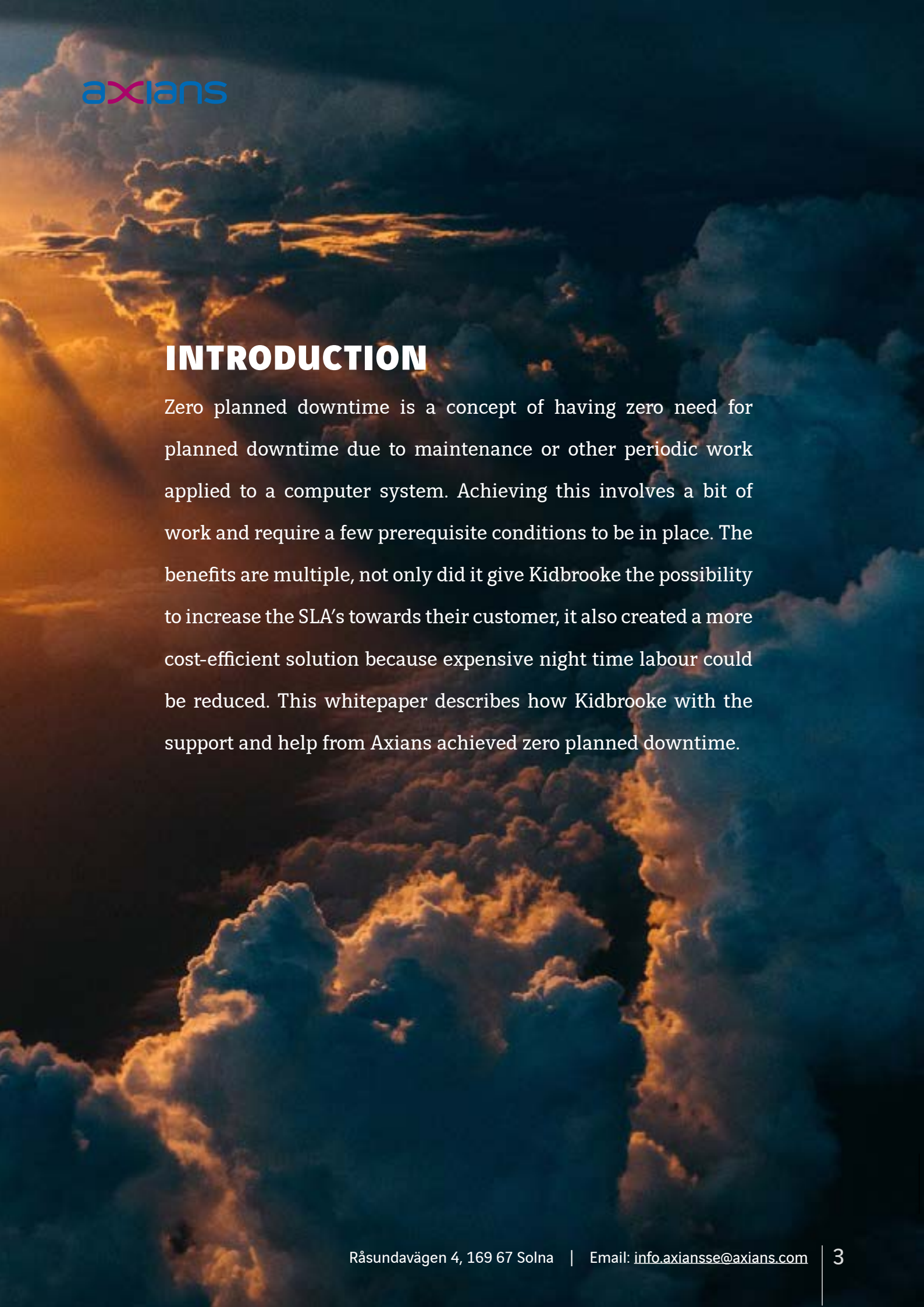


INTRODUCTION

Zero planned downtime is a concept of having zero need for planned downtime due to maintenance or other periodic work applied to a computer system. Achieving this involves a bit of work and require a few prerequisite conditions to be in place. The benefits are multiple, not only did it give Kidbrooke the possibility to increase the SLA's towards their customer, it also created a more cost-efficient solution because expensive night time labour could be reduced. This whitepaper describes how Kidbrooke with the support and help from Axians achieved zero planned downtime.

ABOUT KIDBROOKE

Kidbrooke is a tech company specializing in software solutions dedicated to improving decision-making processes in the financial services industry. Founded in 2011 in London, Kidbrooke provides OutRank, a financial simulation engine. By distilling decades of research in the fields of quantitative analysis, behavioural economics and portfolio management into easily accessible APIs, Kidbrooke enables any financial institution to build next-generation digital wealth experiences. Current use cases include holistic financial planning, pension planning, mortgage/credit analytics and investment guidance/advice.

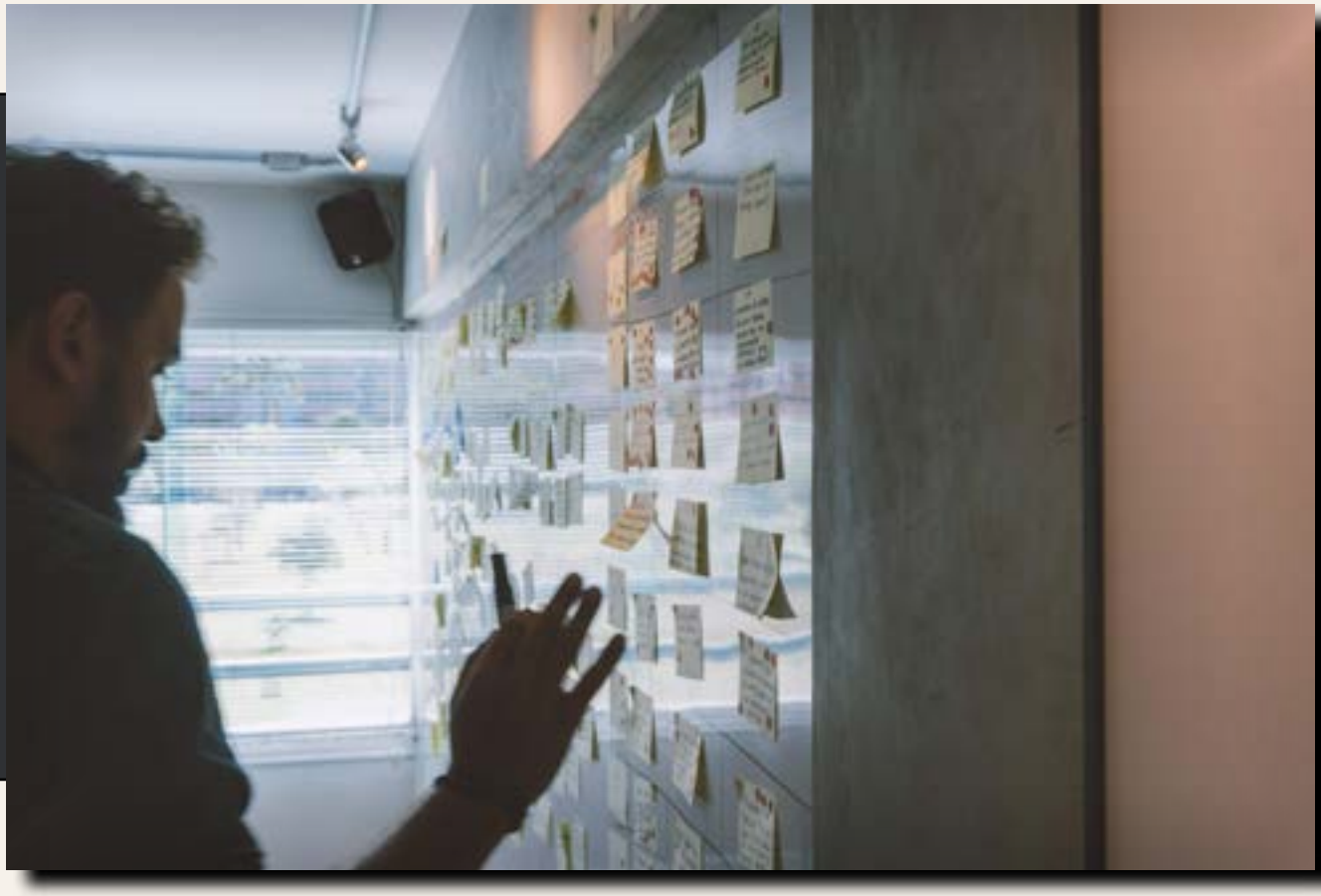
ABOUT AXIANS

As our customers' partner, our mission is to deliver sustainable, seamless, and accessible IT solutions 24/7. Our mission is to secure our customers' information assets and deliver first-class guidance and expertise in close dialogue and with transparency. Always one step ahead through preventive guidance, we are an IT partner you can count on. 24 hours a day, all year round. Our areas of expertise are: Cloud & Datacenter, Cybersecurity, Enterprise networks, Professional Services, ServiceNow and Digital workplace.

We are a global partner with local presence. Axians Sweden AB has 160 employees and Axians globally has 12.500 employees in 27 countries. The Swedish headquarter is in Stockholm.

We wanted to automate everything possible.

- Kidbrooke



WHAT KIDBROOKE WANTED TO ACHIEVE

- Efficient build, provision and deploy processes
- Quick recovery from a defect or outage
- Reduced cost for cloud environments

The aspect of zero planned downtime was actually not on the table initially but as the project matured, Kidbrooke started to realise that it was indeed possible and would have additional benefits in terms of their ability to offer competitive SLAs to their customers.

Efficiency with regards to build, provision and deploy is spelt automation. Kidbrooke wanted to automate everything possible and Kidbrooke and Axians saw a lot of potential for achieving this goal by operating on Azure Dev Ops.

Kidbrooke was already using an agile software development process, so it was natural to start with existing components such as, continued integration and automated testing, and build from there.

BASIC ASPECTS BEFORE STARTING:

- A solid dev ops culture needs to be in place with routines such as continuous integration and test automation as part of daily processes.
- Although not a prerequisite, having your system run natively in the cloud certainly helps and brings additional benefits as we will describe in this white paper.

> **We created "one team" which allowed and enabled a true agile workflow.**
>
> **- Axians**

PROVISIONING OF CLOUD RESOURCES

The first part to receive attention was the provision of cloud resources. In order to achieve the goal of Zero Planned Downtime, Axians and Kidbrooke first needed to establish a strategy to monitor and maintain the infrastructure without the possibility of

false negatives from a monitoring standpoint - in other words to monitor the live environment only. One of the key elements of achieving this was by the blue/green deployment model that we will describe now.

- Provisioning, build, deploy and testing of the deployed environment is performed in one pipeline.
- The deployment environment is created from scratch, ensuring that provisioning can always be performed. This also allows for changes in the infrastructure of the service to be made without concern regarding the prior state.
- After deployment of the service and an extensive test suite of end-to-end has been run, the deployment environment becomes the active environment.
- The inactive environment is decommissioned automatically after a specified period to reduce hosting costs.

Automation of the provisioning not only saved Kidbrooke time and decreased the risk for manual errors. It also helped Kidbrooke decrease spending on cloud environments since they could be torn down more frequently than if this kind of automation hadn't been in place.

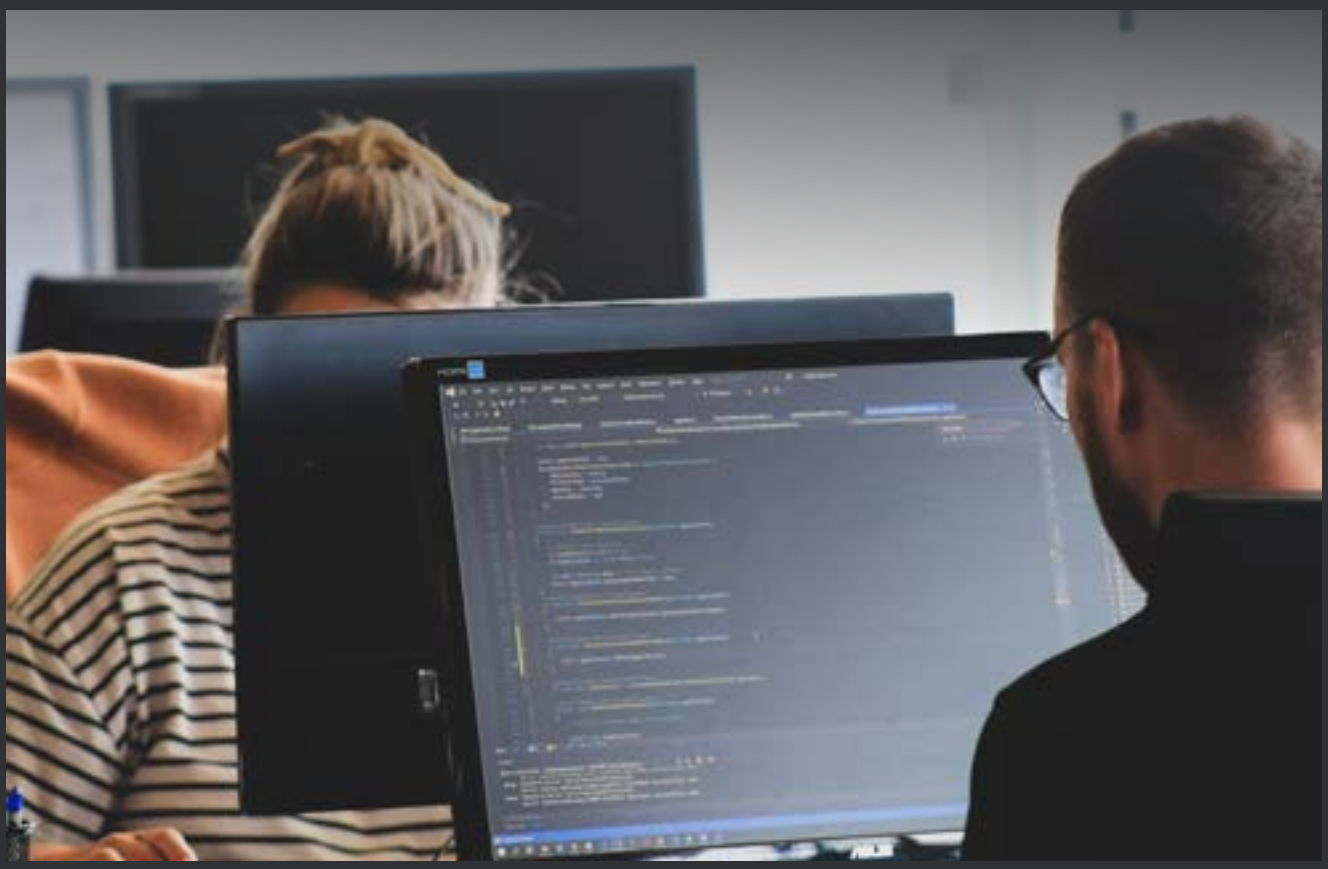
BUILD AND DEPLOY & THE BENEFITS

Although Kidbrooke was already operating at an elevated level of automation of build and deploy, there were several enhancements to be made toward achieving their end goal.

One such important aspect that was improved was flexibility around systems and applications that could be set up by pipelines rather than applied manually.

Once this was done, all aspects of system and application configuration were part of the build and deploy pipelines.

Another benefit was the improved automated static application security testing, which includes threat and risk scanning of external inbound network traffic.

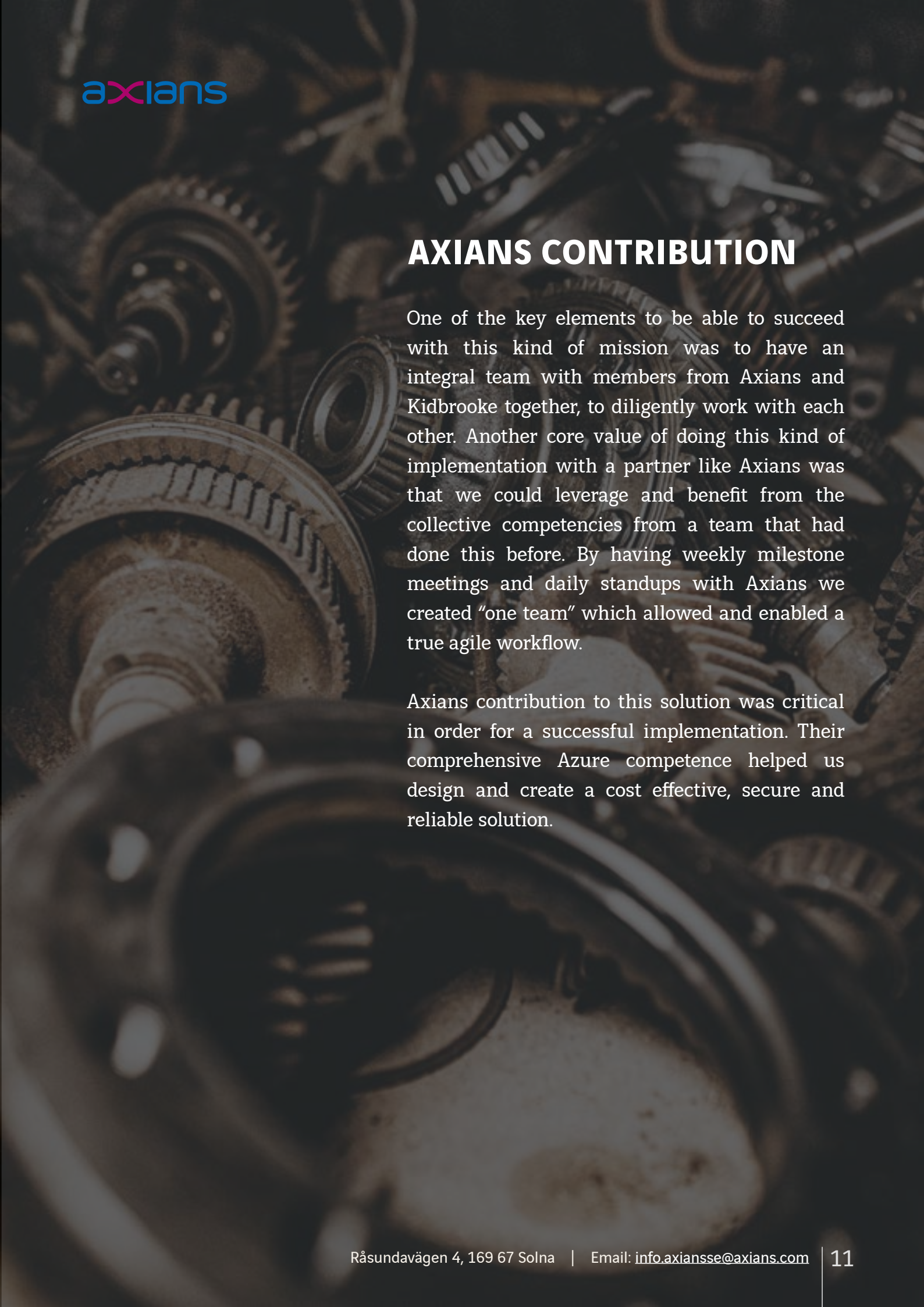


ARCHITECTURE

The final aspect that had to be considered was the architecture of the application itself and what cloud infrastructure components were used.

To properly utilize the blue/green approach there must be a controlled method to channel the requests to the active environment and where the actual switch between environments can take place. In Kidbrooke's case an Azure component called Traffic Manger was chosen. An Azure Traffic Manager is a load balancer and functions as this switch.

Since Kidbrooke's product OutRank currently does not manage any state between requests it was easier to design a switch-over solution. Applications maintaining state between requests would have to keep track of what environment owned the session in each case and keep environments alive until all such sessions run out.



AXIANS CONTRIBUTION

One of the key elements to be able to succeed with this kind of mission was to have an integral team with members from Axians and Kidbrooke together, to diligently work with each other. Another core value of doing this kind of implementation with a partner like Axians was that we could leverage and benefit from the collective competencies from a team that had done this before. By having weekly milestone meetings and daily standups with Axians we created "one team" which allowed and enabled a true agile workflow.

Axians contribution to this solution was critical in order for a successful implementation. Their comprehensive Azure competence helped us design and create a cost effective, secure and reliable solution.

WANT TO KNOW MORE?

Would you like to know how Axians can support your organization? Don't hesitate to email us at **info.axiansse@axians.com** or why not directly contact one of our sales managers:

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