



BRISA

Customer Care Infrastructure UX and Monitoring Implementation



DEVELOPMENT

Case
Study



CROSSJOIN



SUMMARY

Brisa and **Crossjoin** jointly defined and implemented a list of user experience (UX) and activity metrics to monitor the overall health of their Customer Care infrastructure.

This gave Brisa a starting point towards real-time performance evaluation of their key platforms communicated through an enterprise dashboard that was also jointly designed and implemented by Crossjoin and Brisa.



ABOUT THE CLIENT

Brisa is since 1972 the largest private road operator in Portugal and stands out at both national and international levels.

It seeks efficiency in all dimensions of its business. transportation company. The group's largest business area is highway management, in which it is the largest concessionaire in Portugal. Brisa owns **Via Verde** that operates a well-known electronic toll collection system.

An ex-Crossjoin employee recommended us to Brisa due to our large experience in the field of performance monitoring and troubleshooting.



CHALLENGE

Brisa's Customer Care platforms are business critical and include, amongst others, customer portal websites, CRM platforms, *backoffice* platforms and mobile apps. Guaranteeing customer satisfaction, both internally and externally, is essential.

The challenge was to collect the right key performance metrics on these platforms without overwhelming Brisa with excess information that would hinder a quick response to performance issues.

The objective is to obtain real-time insight into performance bottlenecks and through analysis of the metrics help diagnose the area of infrastructure (i.e. Database, network, storage, server, etc.) that is responsible for the degradation.

The first task was to get to know and document Brisa's infrastructure to understand its components and determine which could be best candidates for user experience monitoring.

As the implementation of the metrics moved along it became apparent that it would be important to create a way to quickly visualize the User Experience panorama at any given time.



This necessity materialized in a dashboard that could be understood by both technical and non-technical staff (i.e. Director level) at Brisa.

Another objective is to create consensus over the measurement user experience by using a common language such as APDEX (Application Performance Index).

Crossjoin used its dashboard monitoring experience to help Brisa build an accepted vision of the data. This later led to the idea of creating a second dashboard that would allow technical teams to efficiently identify the resource (i.e. Database, Network, Application Servers, Virtualization layer, external service providers, etc.) responsible for performance issues.

This work unleashes other paths such as discussing what the desired KPI (Key Performance Indicators) values should look like and how to tackle the root cause of recurring performance bottlenecks.



WHY CROSSJOIN

Crossjoin is recognized in the market to deliver a **performance engineering service** based on a methodology that guarantees success achieving results in projects defined as “impossible” missions.

Our expertise in the area of performance is complemented by our own **X-Viewer** product offering that is also used to build monitoring dashboards.



SOLUTION

To be able to gather meaningful user experience metrics it was decided that the sources of data should focus on:

- a) **Internal user's browser experience by monitoring page load times.** This allows tracking of not just the internal CRM navigation experience but also any other external site (i.e. Office365, Sharepoint, etc.) that is required for the users to execute their function.
- b) **Virtualization layer (Citrix).** Since Brisa's staff access productivity software (i.e. Browsers, Office suite, etc) through Citrix, this was a natural choice.
- c) **Proxy.** The tendency, at Brisa, is to move infrastructure to the cloud, more traffic will flow off-bound, through the proxy, from the internal network to external service providers. This means that gathering data on external network latency/load is essential.
- d) **Google Analytics.** To be able to track the load and page load times on Brisa customer's web portals, Google Analytics and Tag Manager was used.



e) **Selenium.** To assess availability, identify functional errors and track which functionality is slower/slowing down, Selenium was used to automate recurring tests to the Brisa's customer web portals functionality.

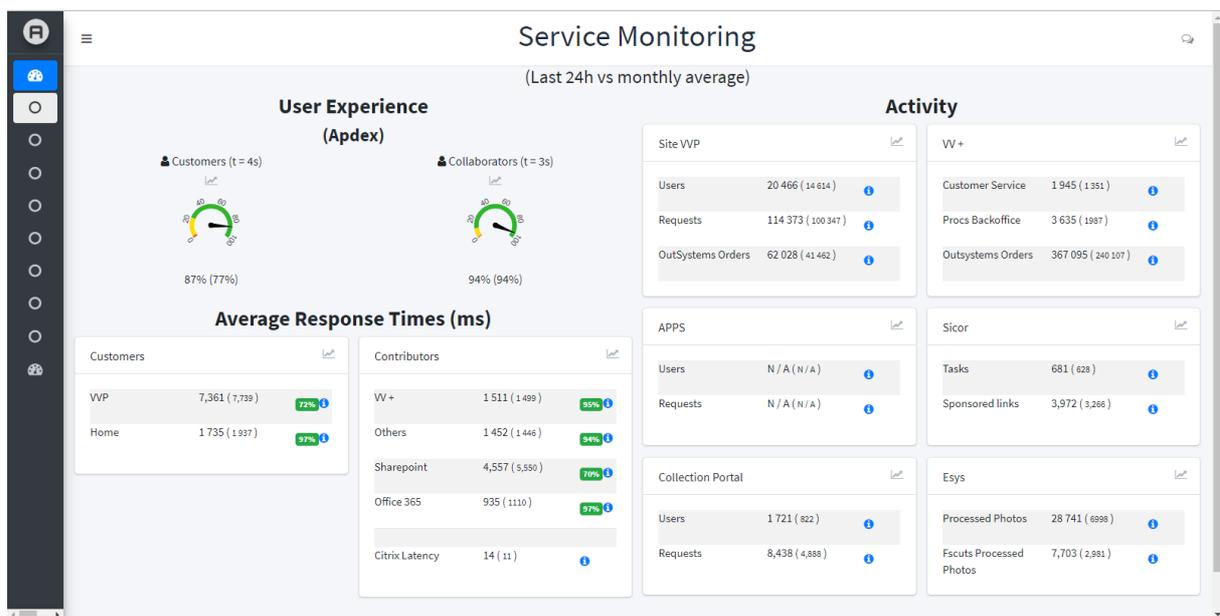
The data extracted from these sources allowed the creation of a dashboard to visualize the data historically and near real-time using the Zabbix platform for graphing the data.

The design of the dashboard went through many rounds of brainstorming and mockups building until the right format was found.



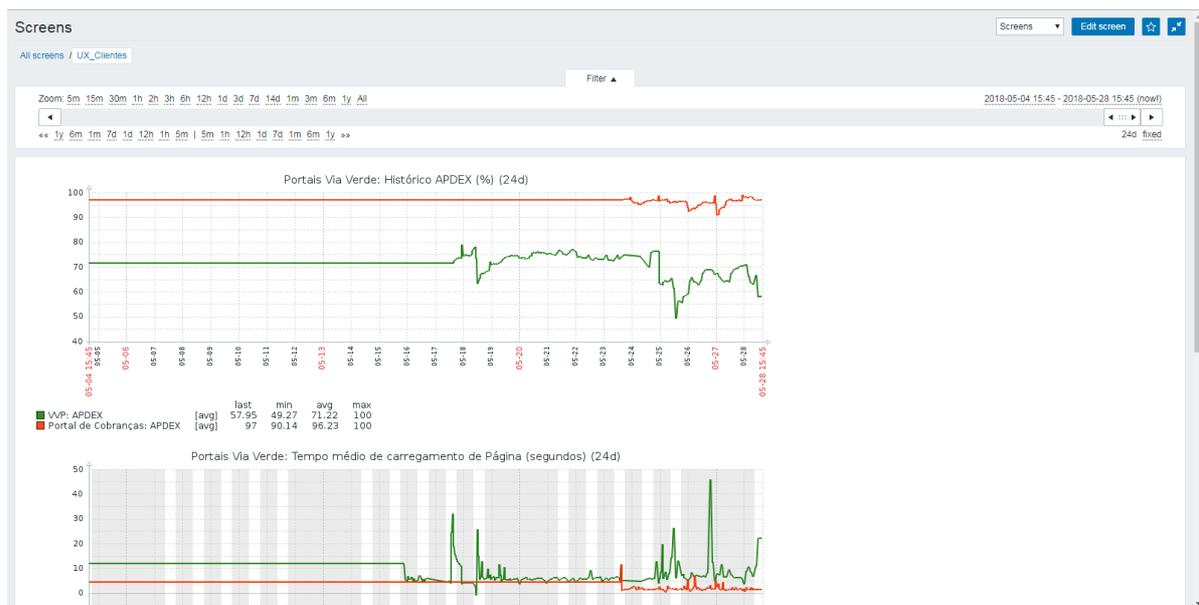
RESULTS

The most visible result of this project was the web dashboard that was custom built to aggregate the data collected from the different sources of user experience:



This dashboard was built using Bootstrap, customized PHP and Javascript code and some custom Javascript libraries to obtain the right visual layout that would be attractive and informative.

Each section of the dashboard allowed a drilldown into the historical view of the data in Zabbix:



Other approaches to Zabbix were tried though the use of the Grafana platform and custom Charting libraries such as ChartJS but in the end, Zabbix was chosen due to its simplicity.

"We found in Crossjoin a partner with the diversity of technical skills we needed, as well as the vision to tackle in an integrated way, difficult and multidisciplinary problems. A rare combination, which for demanding challenges is decisive. "

Paulo Ferreira - Direção de Tecnologias e Sistemas