

On the Case: Pivotal-Comic Relief

Pivotal modernizes Comic Relief IT infrastructure
with PaaS Cloud Foundry

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Michael Azoff



Summary

Catalyst

Every two years, charity Comic Relief's Red Nose Day takes over primetime Friday night programming on UK's BBC TV for seven hours. This telethon is responsible for the majority of Comic Relief's fundraising. Viewers donate money via the website or a network of 14,000 call center operators, who donate their time for free, across 120 call centers. In these seven hours every two years, the donations platform has to take all the money without any outages, and the platform needed to be modernized to be able to scale with the popularity of the event and other Comic Relief campaigns, such as Sport Relief. The decision was made to move the donations platform to Pivotal Cloud Foundry.

Key messages

- The Comic Relief donations platform required scaling from a small number of transactions to a few days when the peak surge runs into millions.
- Cloud Foundry PaaS was able to provide the necessary burst scalability.
- Cloud Foundry also satisfies the other criteria set by Comic Relief, including open source for no vendor lock-in, and easy maintenance of the solution using modern software architecture.
- For Pivotal, this demonstrates how legacy systems can be swiftly modernized and moved to the cloud using PaaS Cloud Foundry.

Ovum view

Over the past 30 years, UK-based Comic Relief has raised over £1bn for causes around the world. Through its two campaigns, Red Nose Day and Sport Relief, Comic Relief uses the money donated by the British public to fulfill its charitable mission. As the popularity of the charity rose year on year, however, the original IT donations platforms could not keep up with demand. It was built as a tightly coupled "monolith" solution and was not built for easy scalability. The demands on the system on the key night of Comic Relief rise exponentially.

Comic Relief worked with consultancy Armakuni to help build a new donations platform. The consultancy used an agile software development methodology, and this resulted in a fast development cycle. The choice of Cloud Foundry as the PaaS demonstrates how a cloud-based system is ideal for the burst scalability requirements.

This example shows how an aging legacy system that had reached its limit could be swiftly replaced by the modern PaaS platform, Cloud Foundry. Comic Relief is also moving its fund-raising platform to Cloud Foundry and intends to adopt microservices architecture.

Digital transformation is not just about bringing the latest agile, DevOps, and cloud-native thinking to organizations, but also about providing an opportunity to transform legacy systems. Choosing the cloud PaaS is an important decision because cloud-native will in turn introduce new complexities as well as benefits, so the cloud infrastructure should be as invisible as possible to developers. Cloud Foundry is a good choice for this task.

Recommendations

What type of customer could benefit from this IT solution?

A key lesson learned by this customer was that every organization should question whether they are gaining any benefit from spending time and resources on orchestrating and provisioning their legacy infrastructure. A solution such as Cloud Foundry frees development teams to focus on maximizing value by building differentiating technology. The PaaS paradigm removes the need to focus efforts on “plumbing” and other low-level infrastructure management, and is instead about spending time building features and products that make a difference to users.

The other key feature is the move to use DevOps and continuous delivery. By focusing efforts on creating the ability to deploy multiple times a day, Comic Relief reduced risk, increased speed to market, and delivery teams were no longer the cause of bottlenecks. DevOps frees an organization to focus on which products and features they should spend their efforts on and why, and this can only be achieved by adopting best engineering practices in a controlled and disciplined way.

Cloud Foundry has additional benefits that enterprises should consider when evaluating their PaaS. It is widely available on public clouds, including AWS, IBM Bluemix, Google Cloud Platform, and Microsoft Azure, or can be installed in on-premises private clouds. A Pivotal Cloud Foundry variant, which adds services and support, is also available.

Customer case file

IT services data sheet: Comic Relief infrastructure modernization

Table 1: Data sheet

Vertical industry	Charity	Key SLAs	Zero downtime during surge in donations
Customer size	Small	Key facts on ongoing support	Microservices architecture and container friendly platform
Priority issue	Modernization of legacy system	Other	Ease of maintenance
Type of service	PaaS		
Length of contract	Open source software		

Source: Ovum

Background

Comic Relief had an eight-year-old Java application, a donations platform, which was a “snowflake” (a custom application that was costly to maintain). About 12 or 13 technology partner companies and about 50 different developers were involved with bringing the platform up and scaling it out to cope

with the demands of the TV show Comic Relief. Changes were kept to a minimum to reduce risk and because testing was a manual process that was laborious and time-consuming.

In 2011 the increase in online donations meant the system was reaching its physical limits. Comic Relief realized it needed to rebuild the platform and decided on the following goals to be satisfied by the new system:

- Unlimited by technology, it should scale to handle up to 300 donations a second.
- Minimize payments card industry security standards (PCI) exposure.
- Remove reliance on any single third-party supplier.
- Cost-effective.

Implementation and results

Comic Relief brought in a consultancy, Armakuni, to help rebuild the donations application. Armakuni specializes in modern software development practices and recommended that Comic Relief take an agile, iterative approach to rebuilding the application. It also suggested that Comic Relief use the public cloud in conjunction with a cloud-native platform for deployment and operations. The choice was to build the new platform using PaaS technology Cloud Foundry. This was to avoid tie-in to any IaaS provider and allow the charity to move development forward more quickly.

Using Cloud Foundry meant that development work could begin quickly. Within two weeks of getting project approval, Comic Relief presented progress to its board and showed a single transaction being processed all the way to the money hitting its bank accounts. The journey was simple, but being able to show an ability to take money in such a short space of time gave the executive team confidence that the project was on the right path.

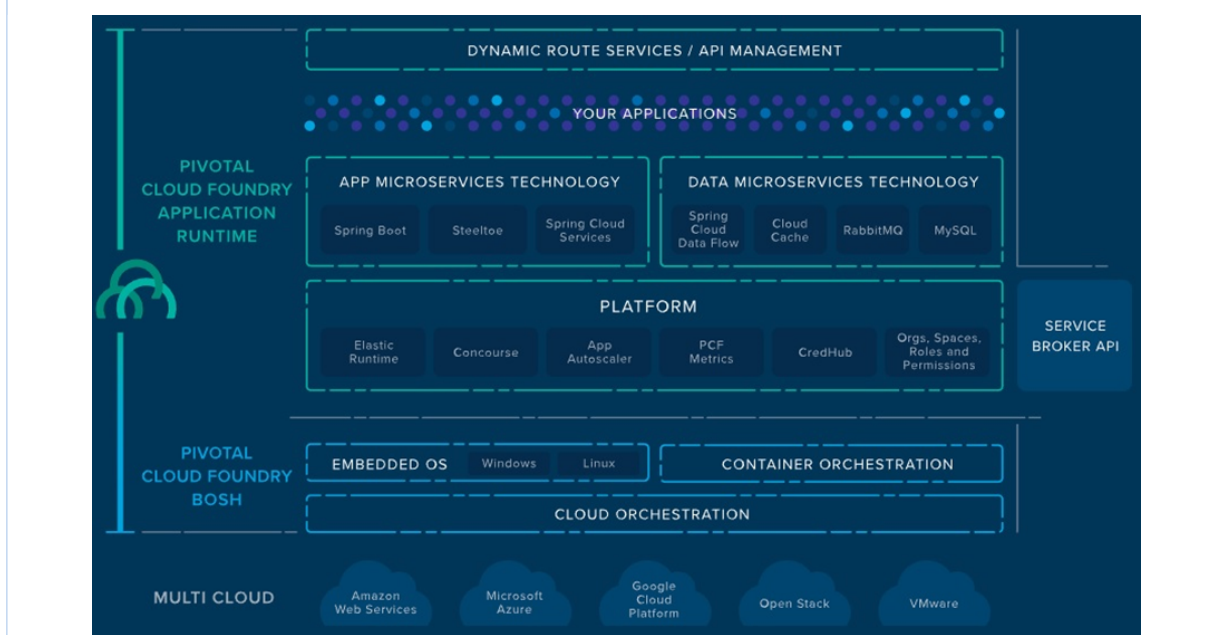
Armakuni then presented progress every two weeks to the executive committee to further build confidence. Forward momentum was measured by tracking the actual working software delivered.

Key to the success was Armakuni's insistence on following best practices, such as test-driven development, behavior driven development, and continuous delivery. It also adopted a DevOps culture, and had complete vertical ownership of the platform by doing all the development and completely owning its operation.

The result of this modernization is that for the past few years since using the new platform, Comic Relief has managed to take all the donations submitted to it, which was its primary goal. In addition, there has been no downtime on the platform during critical high-demand moments, and user error was reduced significantly by processing all payments synchronously. The resulting increase in donations was valued at hundreds of thousands of pounds sterling.

The platform has been further enhanced to allow multi-variate testing at scale and dynamically shift traffic to the most performant version of the website page. These enhancements have increased Comic Relief's overall totals. Furthermore, as an organization, Comic Relief started pushing the best practices introduced by Armakuni to the rest of the organization after seeing how successful they were.

Figure 1: Pivotal Cloud Foundry cloud-native PaaS, architecture view



Source: Pivotal

Appendix

On the Case

On the Case is a premium case study produced by Ovum's IT Services team. These case studies highlight IT services and outsourcing engagements based on a series of criteria, including innovation (a unique component in either service engagement or delivery, or the deployment of cutting-edge technology), proven business benefit or impact, and demonstrable ROI. On the Case is designed to provide insight to enterprise customers looking to implement similar IT services or outsourcing engagements and/or to provide lessons learned on how to work and interact with the IT services/outsourcing vendor profiled in each case study.

Author

Michael Azoff, Principal Analyst, IT Infrastructure Solutions

michael.azoff@ovum.com

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