How Essi Projects and Red Hat Helped Universitat Oberta de Catalunya Deploy a Complete DevOps Container-Based Microservices App Platform

Sponsored by: Red Hat

Silvia Cosso
February 2019

IDC OPINION

In the past decade, the pace of IT transformation has become relentless and has involved every aspect of the business, from processes to final output. The result is that enterprises have no choice but to adapt to the change.

With digital transformation (DX) becoming not only a way to build competitive advantage, but also a necessity to ensure survival, companies face tough decisions on how to strike the right balance between the need to transform their datacenter and the risks of doing so.

The IT revolution has also had a democratizing effect, however, making the very pillars of DX affordable to most. IDC has long held that enterprises at the forefront of innovation consistently feature three basic IT foundations:

- A hybrid cloud environment
- An open source friendly IT architecture
- An agile DevOps environment

Nowadays even smaller, traditional enterprises as well as startups with an innovative streak but small budget can afford to introduce these three foundations into their own datacenters without breaking the bank.

Tools such as cloud and open source have democratized IT: they allow every enterprise (no matter its size) to replicate the same efficiency and scalability of the most innovative IT companies, without the pain. Hybrid IT environments built with the help of open source foundations with qualified support are easy to set up and enjoy the same enterprise-grade support level of traditional proprietary environments, but at a fraction of the cost.

Open source solutions, such as those offered by Red Hat®, are often the first to embrace the latest technology while remaining futureproof thanks to guaranteed version compatibility. Red Hat in particular can leverage a highly granular network of partners such as Essi Projects, a specialist provider of enterprise-grade open source solutions, to mitigate the risks of infrastructure implementation and maintenance while remaining considerably less expensive than proprietary infrastructure vendors.

IN THIS PARTNER SPOTLIGHT

This IDC Partner Spotlight illustrates how the Universitat Oberta de Catalunya (UOC), an innovative online university, worked with Red Hat® partner Essi Projects to adapt its ageing IT infrastructure for its emerging business needs to support its growth plans.

SITUATION OVERVIEW

The digital transformation path is strategic as well as necessary and is something that can't be postponed for most enterprises. Although this inevitably leads to some disruption, nowadays enterprises have the previously unthinkable opportunity to replicate in their own environments the same innovation pillars that have been used to such success by many IT innovators — and with much less risk. As shown below, for UOC in Spain, tapping into Red Hat's open source paradigm to implement its DX strategy and leverage the expert support of its network of partners was the best and most affordable way to minimize risks while ensuring a future path to growth.

USE CASE: UOC UNIVERSITY

Organization Overview

The Universitat Oberta de Catalunya (UOC) offers lifelong learning to almost 55,000 students a year through almost 3,700 online courses. UOC has grown its business in the past two years and projects a twofold increase in its current business by 2020 following plans for further expansion into new geographies.

To keep pace with the expansion, the university has already had to move its datacenter twice. Currently, its IT infrastructure is mostly kept on premise in two datacenters, and it supports about 200 applications. However, with a new initiative among the Catalan universities to create a single, common hosting site for their datacenter infrastructure, and in the light of its new expansion plans, UOC felt the need to innovate its current IT setup to make it more suitable to support its development plans.

As the business has grown, the existing infrastructure wasn't able to scale efficiently enough to sustain current growth, while further expansion of the existing

> *"Essi Projects' support to the Universitat Oberta de Catalunya throughout its digital transformation journey has been invaluable, thanks to its ability to point us toward the Red Hat solutions that were right for us and to the flexibility demonstrated in accommodating our needs. We now feel we have implemented the right IT infrastructure to support the growth of our business."*
>
> *José Manuel Fardello, IT Manager, Universitat Oberta de Catalunya*

datacenter, the university found out, would increase the already high maintenance costs to linearly scale with the capacity growth. UOC therefore embarked on a project to assess the best IT architecture to support growth while at the same time keeping disruption to a minimum and fully justified by the ensuing advantages. In doing so, it turned to Essi Projects, an IT consultancy and certified Red Hat® Premier Business Partner located in Spain with offices in the U.K., a specialist in project integration and certified technical training projects and with a strong focus on enterprise-class open source software.

Essi Projects' mission is to support enterprises through their digital transformation path with a focus on hybrid cloud infrastructure, DevOps, and automation developed over nearly 20 years. Moreover, as a unique feature in Spain, Essi Projects offers a single point solution portfolio

inclusive of technical training, consultancy, and full enterprise support spanning the whole Red Hat portfolio.

For this reason, Essi Projects immediately appealed to UOC as the ideal partner to help the institution meet its goal, given that the university, as with many companies embarking on their DX path, understood the advantages of consulting with an experienced partner on how to achieve its technology vision.

After consulting with Essi Projects, UOC quickly realized that a cloud environment would be the most suitable option, as it would offer near-infinite scalability on demand and full availability even in dispersed geographical locations. The need to keep compliance data on-premise, and UOC's preference for private cloud for its most business-critical apps, led it to choose a hybrid cloud architecture, with public cloud leveraged for capacity-burst management.

As UOC's business is mostly centered around its very structured application environment, the institution, after briefly considering an IaaS-based solution, decided to take the leap to a PaaS-based product as it envisioned the opportunity to restructure the way it developed its applications in a more scalable, standardized, and end-user-friendly way. After all, a sound DevOps environment, as mentioned, is one of the pillars of successful DX-ready companies.

UOC, which outsources app creation to several external companies, wanted to increase its organizational efficiency and standardization. Each company was using its environment of choice to develop the coding, and merging heterogeneous environments was becoming increasingly challenging. Moreover, the restricted availability of the university's own platform outside its premises resulted in lengthier debugging and testing times before the apps went live.

Current issues and future opportunities led UOC to consider a more innovative but long-sighted architectural shift toward containerized microservices, universally seen as the best foundation for cloud-enabled applications. In recent years, in fact, many large internet companies and startups have evolved from a monolithic architecture to a service-oriented one because designing applications as a set of loosely coupled, independent microservices has clear management advantages when it comes to complex and evolving application environments. Microservices would allow UOC's developers to deal with smaller building blocks, easier to develop and scale thanks to their independency from one another. Also, managing the underlying hardware infrastructure becomes easier as the architecture is more fault-tolerant, scalability can be tuned to the desired level, and there is less dependency on a given technology stack. However, microservices come with a proliferation of applications to control, as well as the added complexity of managing distributed services across different servers and locations.

As the need for management simplification emerges in parallel with the need for further standardization, UOC consulted with Essi Projects about opting for Red Hat® OpenShift®, a PaaS offering which could provide it with a stable, infrastructure-agnostic, and easy to manage base for its microservices containerized applications, while also bringing standardization in the DevOps environment.

Red Hat OpenShift is Red Hat's open source container application platform built for and around Docker containers and the Kubernetes orchestration platform. It is available in two consumption models: as a service on public cloud and as a standalone platform that enterprises can deploy in their own datacenter or private cloud.

With the help of Red Hat OpenShift, UOC managed to achieve:

- **A consistent, standardized DevOps environment.** As UOC previously had to manage multiple development environments chosen by its external companies, it often ended up having to deal with different versions of programming language and development silos that became a security overhead and took a long time to integrate. With Red Hat OpenShift, it can now provide a common, standardized DevOps environment encompassing all its applications and partners. Developers have also become more agile, as they can develop their applications in a standard language and test them extensively in the same environment used for production.

- **Quicker application development and deployment.** Thanks to its use of containers and its ease of management, Red Hat OpenShift enables more rapid application development that can easily translate into a business differentiator such as quicker time to market. The university has already made significant time savings in application development and management, translating into cost structure improvements and better time allocation for developers and IT admins.

- **Better management and coordination of projects from different locations around the world**. This is a central aspect of UOC's geographical expansion strategy.

- **Affordable access to cutting-edge innovation.** Red Hat's commitment and community-based ecosystem ensure it stays ahead of innovation, providing continuous upgrades to its systems and services. This is a clear differentiator compared with traditional vendors, where adapting to the latest technology depends on the single vendor roadmap and can be expensive to carry out.

- **Full enterprise-grade support and training through Red Hat's partner network.** Red Hat's partner network provides enterprise-grade assistance on a 24 x 7 basis, and Essi Projects is also uniquely positioned in Spain not only as a consultancy but also as a training provider specialized across the whole Red Hat portfolio.

- **The flexibility to integrate other hybrid cloud building blocks.** Red Hat OpenShift works not only as a standalone solution but also as a foundational building block of Red Hat's hybrid cloud infrastructure. It can integrate with other Red Hat blocks such as OpenStack® and with different proprietary solutions, giving the end user full flexibility on the architecture setup and level of desired integration. UOC also integrated Red Hat® CloudForms® in its stack, enabling it to manage and control a future hybrid cloud from a single point, and Red Hat® Ceph® Storage, Red Hat's software-defined storage solution for petabyte-scale storage with block, file, object interface, and API to integrate with Amazon Web Services (AWS) Swift.

ESSENTIAL GUIDANCE

IDC suggests that end users take guidance from UOC on the following points:

- **Cutting-edge IT technology innovation doesn't (always) require major investments or excessive risk-taking.** Quite the opposite, the hybrid cloud and open source paradigm have made it possible for every enterprise to embrace technology innovation while mitigating risks, thanks to the range of available support.

- **Excessive risk avoidance is the highest-risk strategy.** Although certain steps might seem hazardous and hard to justify based on a company's current condition, it is often worth assessing them in the light of (possible) future developments – considering the external and internal IT environments not as a fixed variable but as an evolving factor.

- **Ensure your IT setup has built-in flexibility.** Given that most companies can't predict the optimal architectural setup for their future needs, it is essential that they build some flexibility into their IT architectures. An open source approach, for example, is a strategic

option as it avoids vendor and technology lock-in while allowing quick adaptation or further integration if needed.

- **Plan for qualified support.** A DYI approach, though cheaper on paper, can often hamper innovation, especially if the budget allows only for a limited error tolerance. A trusted and experienced partner is therefore the best way to minimize the risk of failure and to optimize budget.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

IDC U.K.

IDC UK
5th Floor, Ealing Cross,
85 Uxbridge Road
London
W5 5TH, United Kingdom
44.208.987.7100
Twitter: @IDC
idc-community.com
www.idc.com