Case Study

Ground up development using Cello

Dappleworks.com, a cloud based business management solution (HR, Sales, Accounts, and inventory)

Rofarez Solutions, Malaysia

techcello

Introduction

Rofarez Solutions, a micro ISV based in Malaysia was on a mission to provide cloud based applications for small and medium business (SMBs) at an incredibly affordable price. Focused to equip easily accessible Integrated Sales, HR and Financial applications that will empower SMBs to run their business more efficiently. The Customer wanted to build an integrated platform delivered via cloud software-as-a-service (SaaS) model, which enables them to host multiple clients in a single application instance which can save lot of cost towards hosting the application there by provide the product at an substantial price. The Current version of the product has employee services which include HR related functionalities such as Employee Data Management, Online Leave, Claims, Timesheet and Resource bookings. Customer is also in the process of developing more business apps such as Invoicing, Accounting and Payroll modules.

The Need

As a self funded start-up company with a vision of building a turnkey easy to use Cloud Application they had to start all the way from scratch. Given the limited resource and time availability, customer was looking for expertise in developing scalable web architecture. Customer was looking for a technology partner that can help them in building a high quality robust multi tenant application.. Clear milestones and rigorous timelines to release the first beta version was required to rise funding for the product therefore, time to market was the key for the customer and the company to survive.

Apart from Multi Tenant aspects, features such as configurable look and feel, workflow, business rules, custom fields, dynamic reporting, change data capture and auditing etc were some of the core requirements of the solution. They expected the application architecture to be resilient to change as well as provide hooks to custom business functionality where ever required.

On-demand applications are all about innovation and a biggest advantage for the SaaS vendors is the ability to update, patch, customize or attach a new feature overnight. In order to continuously enhance and add new features; the application must be flexible, agile and ready to change.

The Challenge

Building highly secured, scalable, available, performable, extendible, customizable, configurable and manageable application requires sound knowledge in architecting and developing multi tenant cloud based SaaS solutions. To deliver a product that is completely On-Demand, and deliver tenant customizable look and feel, configurable Integration, possibility for the tenant to create their own workflows, business policies, dynamic reporting needed a huge thought process and meticulous design skills. Reliability and High Availability are some of the key SLAs of the end customer. Since the product will be heavily used by the end users throughout the day, the application cannot afford to go down even for a fraction of a second.

Choosing the right technologies was a difficult task for a young startup team. For example choosing an ORM that will suit for the dynamic and complex requirements, choosing a perfect caching provider, best logging and exception mechanism etc In parallel to developing business oriented functionalities, building the basic

Non functional requirements such as Tenant Management, Licensing, Metering, Security, Tenant Manageable Membership was highly risky, time and cost consuming.

Training their technical resources for building a multi Tenant business solution was a huge task and it required substantial time and cost. The Risk factor attached to, over engineering or under engineering the architecture has to be carefully dealt. The trial and error method will not fit for developing tightly budgeted application, particularly for Startups which cannot afford to fund for research and development activities.

The Solution

CelloSaaS, a proven and tested Multi Tenant application development framework helped the customer to build a reliable, scalable and highly available business solution. Cello Multi Tenant architecture and ready to use components bootstrapped the development activity, rather than starting the application from zero, they were able to start at least from 40% base and start developing the business functionalities from the day 1. The development team was able to follow the coding standards, naming conventions, layered architecture and multi tenancy best practices recommended by the framework.

The time saving code generator was used effectively throughout the development to automate the process of hand coding mundane CRUD Operations. The development team was able to concentrate more on business functionalities and leave the pain of designing and maintaining the architecture to the expert professionals. The single Code based multi tenancy and the granular Level License provisioning helped the ISV to transfer their cost savings to the customer in the form of a very attractive subscription model.

About Techcello

Techcello's "Multi-tenant SaaS Framework" (product name: CelloSaaS) fills an important gap between .NET and the Cloud (Amazon, Azure, Private, Public). It helps you build multi-tenant applications 30-40% faster and 50% cheaper. The framework has all the plumbing, engineering and operational components required for a robust and scalable SaaS product.

Why use a Framework?

Techcello's productized framework approach gives complete freedom, flexibility and control of custom development, without the complexities, risks, cost and time overheads of building and maintaining your own multi-tenant engineering stack. It provides a true multi-tenant architecture at the application level and database level.

Why Techcello?

 Unlike other alternatives it does not lock you in to a proprietary development environment or a non-Microsoft run time container, application server or APaaS platform. It retains the .NET environment both during development and deployment, giving complete technical and strategic control over the entire application stack.

Benefits

Saves 40-50% on the cost of building a SaaS product or migrating an existing application to a multi-tenant architecture. You can get to the market faster. It provides a robust, scalable and strong engineering foundation to your product or application (tested, supported and easily extensible). You can deploy your application anywhere from on-premise Windows boxes, Private Clouds and Data centre

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