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**TECHNICAL ARTICLE**


**THEME:**


**"DESARROLLO DE UNA APLICACIÓN WEB UTILIZANDO HERRAMIENTAS RIA CON TECNOLOGÍA ASP.NET. PARA LA GESTIÓN DE VENTAS Y COMISIONES EN LA EMPRESA REDPRIMCELL CIA LTDA"**

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# DESARROLLO DE UNA APLICACIÓN WEB UTILIZANDO HERRAMIENTAS RIA CON TECNOLOGÍA ASP.NET. PARA LA GESTIÓN DE VENTAS Y COMISIONES EN LA EMPRESA REDPRIMCELL CIA LTDA

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**SUMMARY:** Developing a web application using asp.net technology RIA tools. for managing sales and commissions in the company REDPRIMCELL CIA LTDA , the application will systematize the processes of sales and commissions related to marketing individual plans, mobile broadband internet , electronic databases recharges, prepaid cards for the cities of Ibarra , Otavalo , Cayambe , Cotacachi , Atuntaqui Town, Johannesburg and other cities in the north of the country to provide quality services , in this case to the internal customers, employees, important to know where the company is heading also includes the investigation of the characteristics information the Silverligth 5 development tools dynamic web applications.

**KEYWORDS:** Development, RIA, Silverlight, Web Application.

## 1. INTRODUCTION

Redprimcel Cia. Ltda. Master Distributor of Claro, is a company that sells mobile communication services, was created on June 1, 2010, including a total of 15 employees, 5 Administrative and 10 Commercial Advisors (sellers). They have the following departments:

- Operations

- Accounting

- Sales

- Customer

- Human Resources

Today with the advancement of technology, RIA Web applications have had a crash course in all types of businesses boom, improving process quality and the environment for the end user. Such applications require a single server configuration since customers just need web browsers and a good network connection.

## 2. OBJECTIVES

### 2.1. General

Deploying a Web Application Management Sales and Commissions Redprimcel company Cia. Ltda . , Using RIA (Rich Internet Aplication ) tools .

### 2.2. Specific

- Document the information and processes to develop the system generated using the XP methodology.

- Investigate the use of Microsoft Silverlight 5.0 tools for application development.

- Develop web application for managing sales and commissions in such a way that is friendly and easy to use.

- Testing, validate and deploy the web application to the company.

## 3. JUSTIFICATION

The Web application developed allow the execution of the processes involved in the management of sales and commissions of the company easier, faster and can be accessed from anywhere through the Internet. The controls related to such management system run automatically, the launch of the application significantly reduce delivery time

daily and monthly reports, and fully eliminate documents that currently is generated (records, forms of applications , among others).

The Web application will release the customer contract approvals plans so they keep users informed through reports on requests entered ( approval of requests, denial of requests , requests withdrawn , among others ), to thus bringing administrative control and thus lead to decisions to improve the policies of the company and also benefit business advisers as may be aware of their approved plans and the value of their fee to be received which is calculated according to the table of percentages established in the company ..

## 4. SCOPE

This project will develop the following modules:

- **Security Module**

    It will serve to give privileges to users thus control application security

- **Customers Module**

    It keeps track of clients approved and denied requests in plans

- **Sales Module**

    Registry keeps track of sales for products and services that the company has users

- **Commissions Module**

    It keeps track of commissions received by business consultants from the sale of their plans

- **Reports Module**

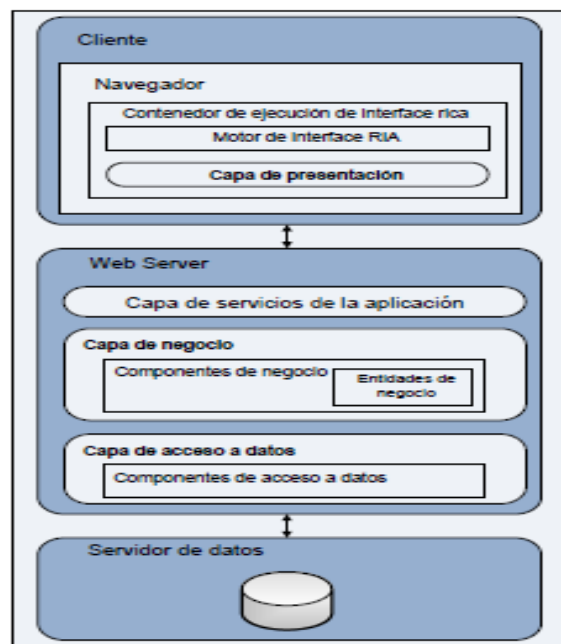    Displays information for decision- making by the administrative staff of the company

## 5. APPLICATIONS RIA

Of Acronym Rich Internet Applications (Rich Internet Applications) are web applications that contains most of the features of traditional applications , these applications use a standard Web browser and run through a plugin can interact with the content of the application . RIAs arise as a combination of the advantages of web applications and traditional applications
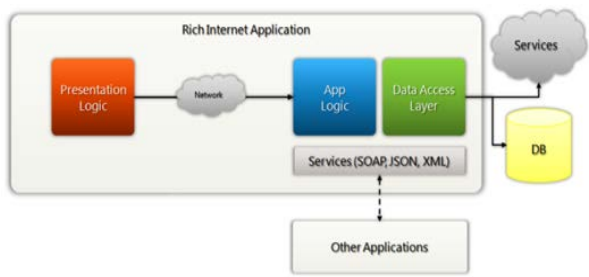


### 5.1. Architecture

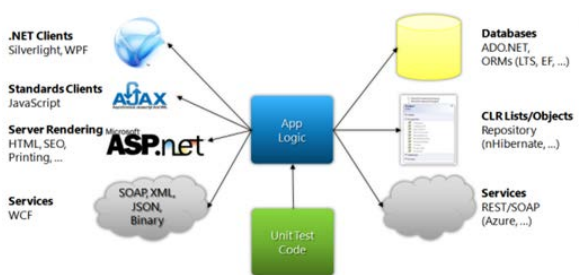The architecture of an RIA comprises:

## 5.2. Main Components



The RIA Aplications (Rich Internet Application) are increasingly developed by software companies, and that can offer a better user experience.



## 5.3. Features

The objective of RIA Services is to simplify application development, designing applications as if they were traditional Web



applications, without having to worry about the basics.
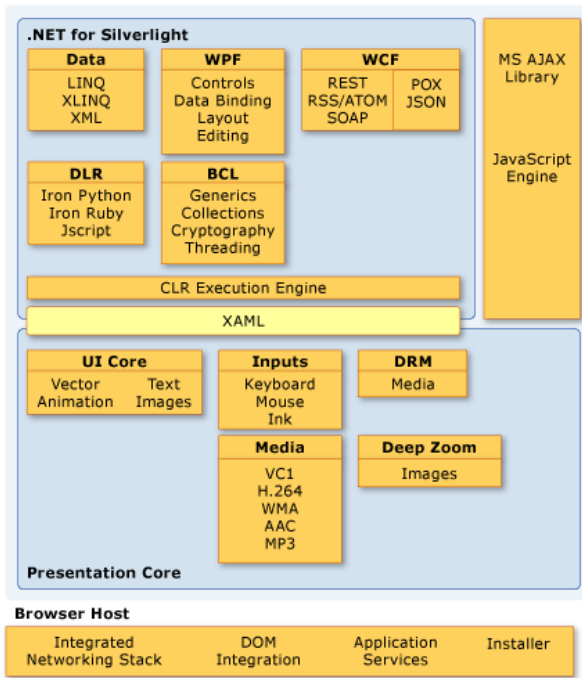
## 6. SILVERLIGHT

Silverlight is a powerful tool for creating and delivering rich Internet applications and media experiences on the Web. Microsoft Silverlight is a web browser plugin based on the Windows platform that adds new multimedia features like playing videos, vector graphics, animation and development environment; similarly to what makes Adobe Flash. Silverlight supports different platforms and web browsers.

### 6.1. Features

- Reduced network latency by using a background thread for networking.

- XAML parser improvements that speed up startup performance and runtime.

- Support for 64-bit operating systems

- Graphics Processing Unit (GPU) accelerated application programming interface 3-D (API) offers rich graphics on the Web for building advanced data visualizations, and rich user experience (UI).

- Immediate mode graphics API allows direct representation of the GPU.

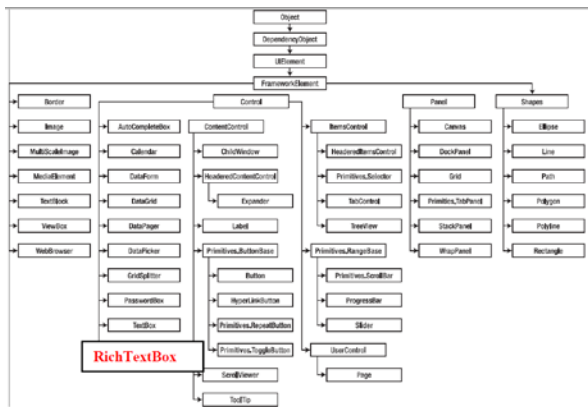- Hardware acceleration is enabled in windowless mode with Internet Explorer 9.

### 6.2. Architecture Silverlight

Silverlight 5 includes not only the initial environment as browser plug -in , but it allows desktop applications and native Windows applications.

## 6.3. Structure applications

Silverlight provides several useful controls for displaying information and manipulation of input data
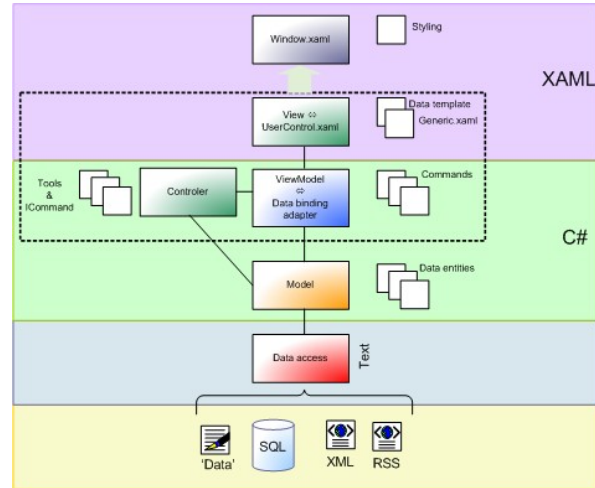


## 6.4. Model Applications

The view is the part with the most familiar and can be seen by the user. Their role is to represent the information, sometimes taking some liberties in order to make it clearer and presentable. A view can also contain certain behaviors, such as accept input data. The view is responsible for this facet (keystrokes, mouse movements, gestures on a touch

screen, and so on) that eventually influences the properties of the model.



## 6.5. Infrastructure MVVM

The infrastructure for basic MVVM requires only two things: a class based on *DependencyObject* or implements INotifyPropertyChanged so that it is usable in the data link, and some mechanism for commands.
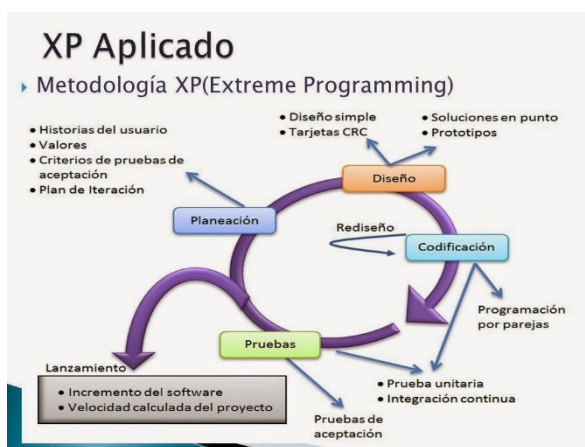


# 7. DEVELOPMENT PROJECT

## 7.1. Methodology Development

Extreme programming or eXtreme Programming (XP) is an approach to software engineering formulated by Kent Beck, author of the first book on the subject, Extreme Programming Explained: Embrace Change (1999).

It is an agile methodology focused on enhancing relationships as key to success in software development, promoting teamwork, worrying about learning developers, and fostering a good working environment. XP is based on continuous feedback between the client and the development team, communication between all participants in the solutions implemented simplicity and courage to face the changes. XP is defined as especially suitable for projects with very vague and changing requirements, and where there is a high technical risk



## 7.2. Planning

### 7.2.1. User Stories

User stories are the technique used in XP to specify the functionality of the system from the point of view of the customer. It is paper cards in which the client briefly describes the features that the system must possess, whether functional or non-functional requirements

| Historia N°001 | Ingreso del Usuario al Sistema |
|---|---|
| Descripción: El ingreso al sistema debe realizarse por medio de una ventana de ingreso en la cual se especifique el nombre de usuario, la contraseña y el rol asignado. Debe existir algún mecanismo de control que no permita que el usuario pueda pegar caracteres en el campo de contraseña, como también no debe permitirse poder copiar la clave del usuario hacia otra fuente. | |

### 7.2.2. Delivery Schedule

According to user stories considered in the system has made the following delivery schedule, which has the iterations for each task

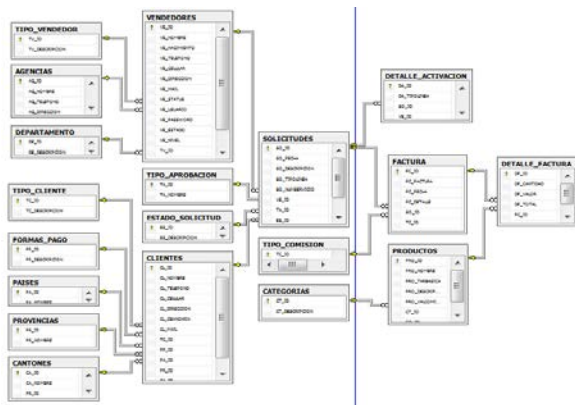| Historia | Nombre | Prioridad | Esfuerzo |
|---|---|---|---|
| 1 | Ingreso del Usuario al Sistema | Alta | 4 |
| 2 | Creación de Usuarios | Media | 2 |
| 3 | Eliminación de Usuarios | Baja | 1 |
| 4 | Modificación de Usuarios | Media | 2 |
| 5 | Ingreso de Planes Telefónicos | Alta | 4 |
| 6 | Ingreso de Solicitud de Plan | Media | 2 |
| 7 | Aprobación Solicitud | Alta | 3 |
| 8 | Despliegue de Información del Suscriptor | Media | 4 |
| 9 | Consulta de Información del Plan Telefónico | Media | 4 |
| 10 | Despliegue de la Información Obtenida del Plan | Media | 3 |
| 11 | Despliegue del Diagnóstico en un DBGRID | Baja | 2 |
| 12 | Determinación de Valores de Ventas | Media | 3 |
| 13 | Determinación de Comisiones | Alta | 3 |
| 14 | Creación de Equipos | Media | 2 |
| 15 | Ingreso de Equipos | Baja | 2 |
| 16 | Control Stock Equipos | Alta | 4 |
| 17 | Reporte de Ventas por Vendedor | Media | 2 |
| 18 | Reportes por Fechas | Media | 2 |
| 19 | Reportes de Comisión de Ventas | Alta | 4 |
| 20 | Reporte Equipos Vendidos | Media | 3 |

## 7.3. Design

REDPRIMCELL CÍA. LTDA is an authorized marketing of mobile phone distributor, these services are mostly dedicated to plans that generate commissions for salespeople.

### 7.4. Coding

#### 7.4.1. Entity Relationship Diagram



#### 7.4.2. Class Diagram



### 7.5. Testing

At this stage, it has been fully implemented iterations that make delivery " MANAGEMENT SYSTEM SALES AND COMMISSIONS IN THE COMPANY REDPRIMCEL Cia. Ltda. "And the product is ready for production start.

## 8. CONCLUSIONS

- Silverlight is a powerful development platform for Microsoft to traditional desktop applications and web applications, while providing implementation capacities in different browsers and different operating systems.

- The RIA (Rich Internet Application) applications integrate ease of deployment and maintenance, centralized updating, platform independence and a better user experience, both in visual media, familiarity of controls, among others.

- RIA Services simplifies the development of rich for all kinds of customers, whether traditional desktop applications or web applications applications.

- The XP is an excellent alternative methodology for software development because it gives the possibility to go further defining requirements as the project progresses , allowing it scalable

## 9. RECOMENDATIONS

- To complement the study should consider additional analysis frameworks for RIA, such as Sun Java Fx Oracle, Adobe Flex and Java Rich Faces that are constantly changing every day.

- We recommend using a development framework to set standards and design patterns to ensure a robust architecture that take advantage of this framework.

- To establish a solid architecture RIA applications using Microsoft Silverligth, is recommended in the persistence layer data use basic technologies O / RM (Object / Relational Mapping frameworks) for entities and contexts necessary for the model It requires Microsoft Silverlight.

- To improve the views within the presentation layer is recommended to use Microsoft Expression Blend by improved design development of rich applications.

- The XP methodology allows small workgroups (2), shorter development times, development projects, object-oriented; currently one of the most accepted methodologies for software development projects, while other methods require detailed documentation processes generating more extensive development time.

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