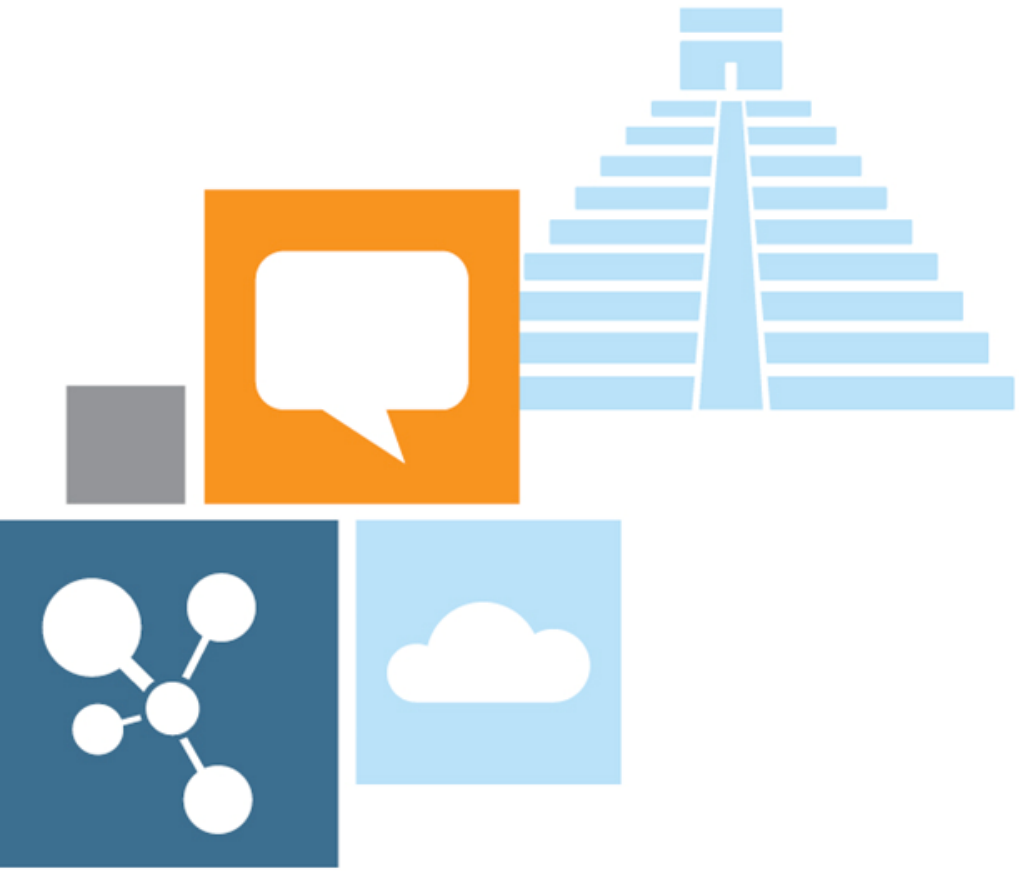
Microsoft



Microsoft® Research

Faculty Summit 2012

Riviera Maya, Mexico | May 23-25 | In partnership with CONACYT

Live ANDES

(**A**dvanced **N**etwork for the **D**istribution of **E**ndangered **S**pecies)

Cristián Bonacic. DVM, MSc, PhD
Fauna Australis wildlife laboratory
Department of Ecosystems & The Environment

Andrés Neyem, PhD
Computer Science Department

www.liveandes.org

May 2012

Overview

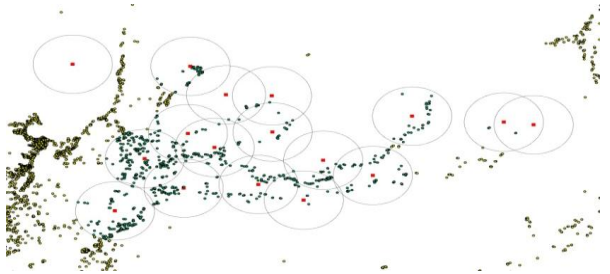
1. Who are we?
2. Why we need LiveANDES?
3. LiveANDES description
4. Mobile/Web application
5. Work done and current progress
6. Study case
7. Next Steps / Challenges

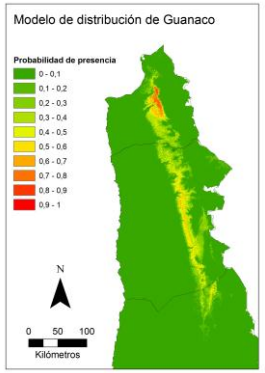
Fauna Australis Research Lab

www.fauna-australis.puc.cl

Our aim is to study wildlife species to suggest conservation actions

We us all sort of techniques in the field and monitoring wildlife need new technologies and ICT





Live ANDES (Advanced Network for Distributions of Endangered Species)

Observing endangered species is not always possible:

One single sighting may provide key information

Scientists access to more data for analyses and can share results with policy makers

Citizens learn about wildlife and gather data for research and management

Officials and policy makers can manage their data, share it among them and have feedbacks with the scientific community & citizens

Live ANDES (Advanced Network for Distributions of Endangered Species)

The aim of Live ANDES is to develop a software platform to :

- Detecting, uploading and sharing photos from endangered species into LiveANDES is an innovative way to contribute to biodiversity conservation by promoting citizen science.

Upload/Visualize/Share Wildlife data

GLOBAL CONSERVATION COMMUNITY

- The value of data sharing for wildlife locations mainly refers to the need of mapping the presence and distribution of endangered species to assess their conservation status according to international standards (IUCN Red list).

We have managed…

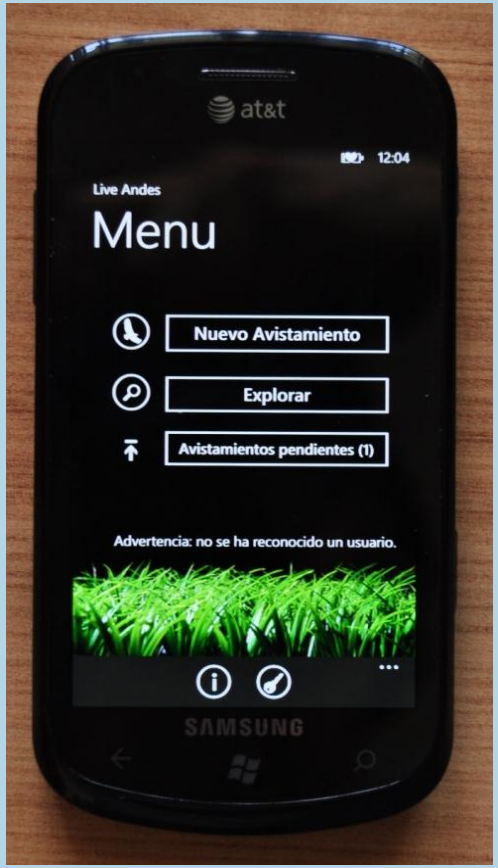
- Multi-language web platform to upload, share and visualize data from more than 820 living species of chilean terrestrial wildlife (by common name, english and scientific name)
- Search, visualize and download records from database
- Mobile/Web application
- Extensive data uploading from remote areas during fieldwork

Live ANDES (Advanced Network for Distributions of Endangered Species)

Mobile Application

Mobile application to explore/upload data from the camera, gallery and GPS

- Online/Offline mode
- Images of species and locations can be uploaded using the camera and GPS
- The closest sightings can be explored by GPS locations
- Our application is developed using C# Visual Studio 2010



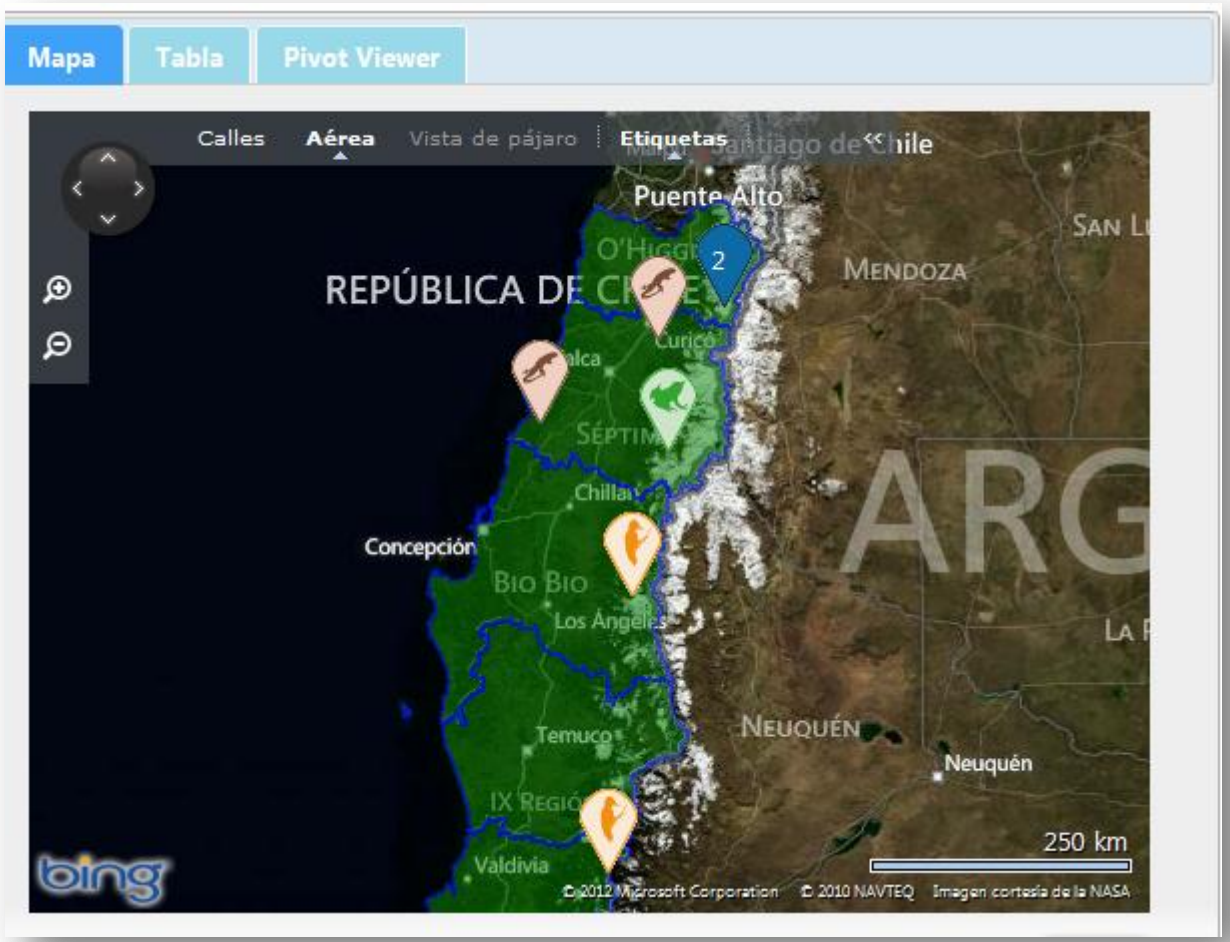
UPLOAD – EXPLORE SIGHTINGS

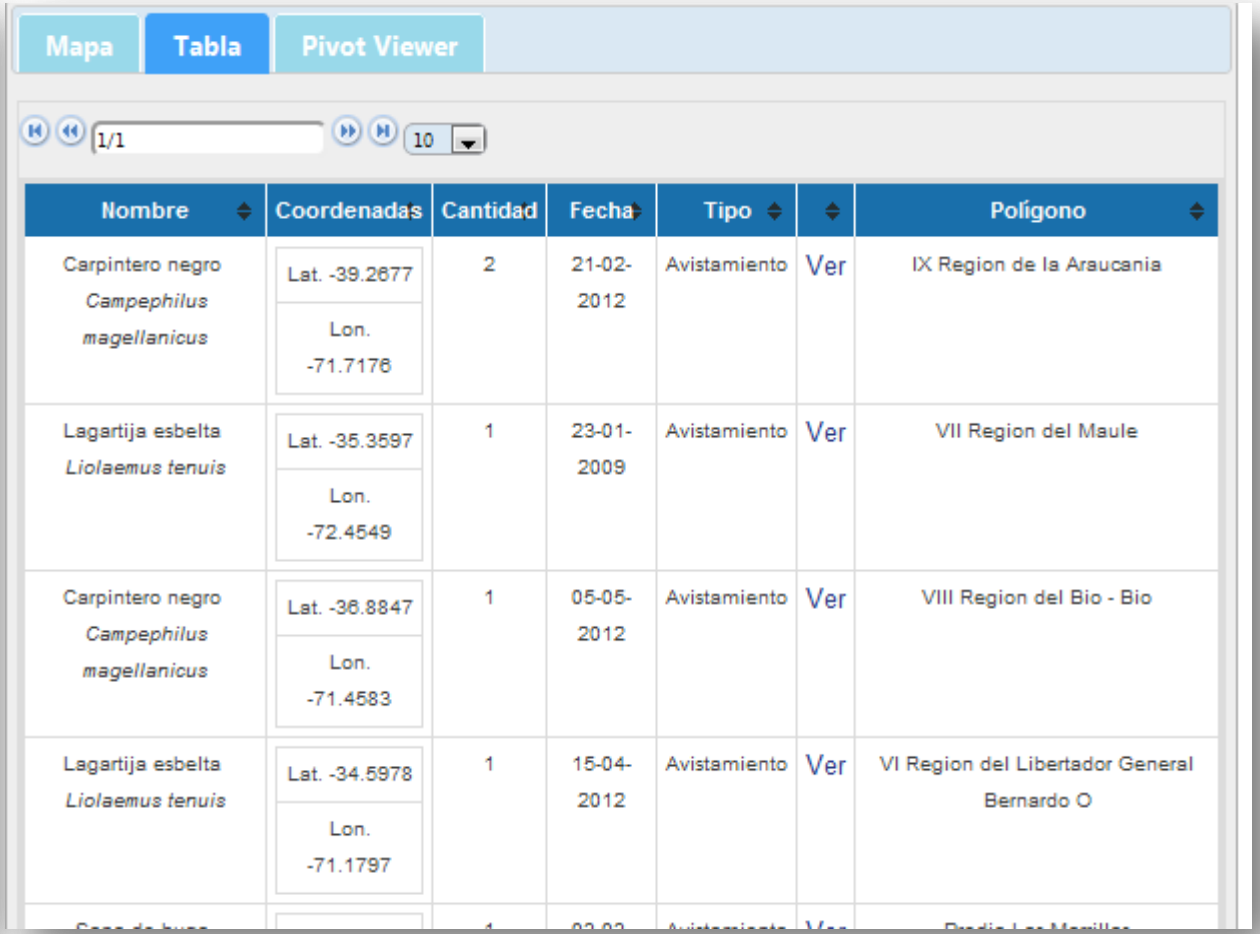
Live ANDES (Advanced Network for Distributions of Endangered Species)

Testing in the field

January/February 2012

Live ANDES (Advanced Network for Distributions of Endangered Species)





Mapa | Tabla | Pivot Viewer

1/1 — 10

Nombre	Coordenadas	Cantidad	Fecha	Tipo		Polígono
Carpintero negro *Campephilus magellanicus*	Lat. -39.2677 Lon. -71.7176	2	21-02-2012	Avistamiento	Ver	IX Region de la Araucania
Lagartija esbelta *Liolaemus tenuis*	Lat. -35.3597 Lon. -72.4549	1	23-01-2009	Avistamiento	Ver	VII Region del Maule
Carpintero negro *Campephilus magellanicus*	Lat. -36.8847 Lon. -71.4583	1	05-05-2012	Avistamiento	Ver	VIII Region del Bio - Bio
Lagartija esbelta *Liolaemus tenuis*	Lat. -34.5978 Lon. -71.1797	1	15-04-2012	Avistamiento	Ver	VI Region del Libertador General Bernardo O

Work done and current progress

Semester II, 2011

- July 18-20. Microsoft Research Faculty Summit 2011, Redmond, Washington, United States.
- Software design development.
- Mobile application design development.
- Meetings with governmental institutions.
- Two new LACCIR proposals.

Technical Specifications

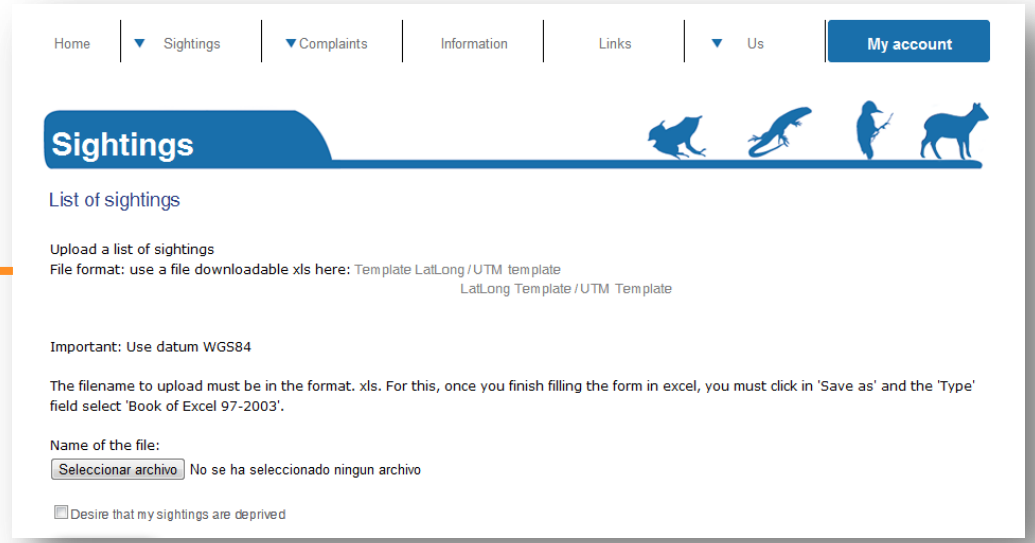
The web solution of the platform is based on Microsoft .NET technologies and it includes features such as …

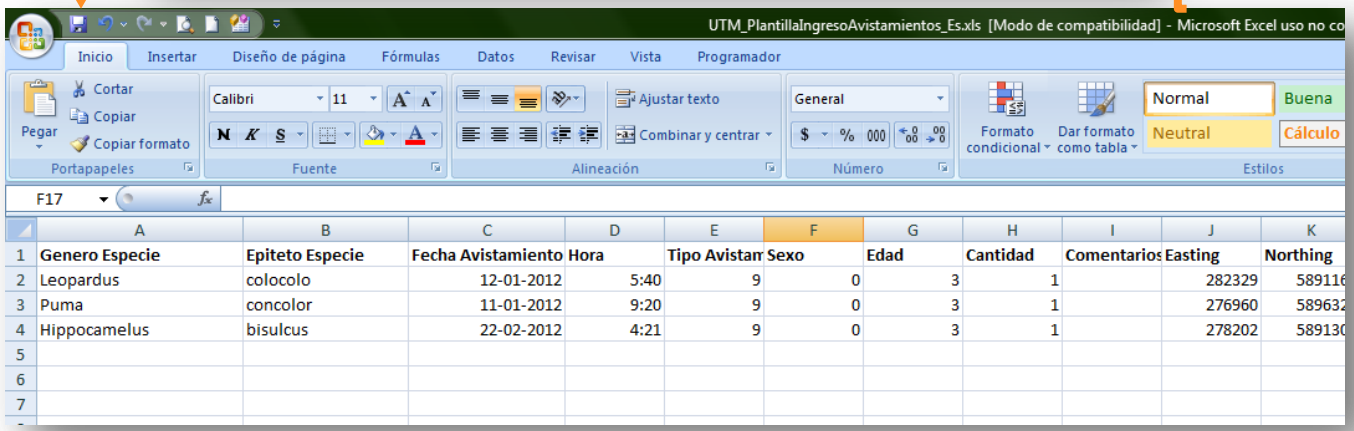
- ASP.NET MVC
- Bing Map Services
- Silverlight Pivot Viewer
- WCF Services
- SQL Server 2008
- Entity Framework
- LINQ

Live ANDES: Future Direction …

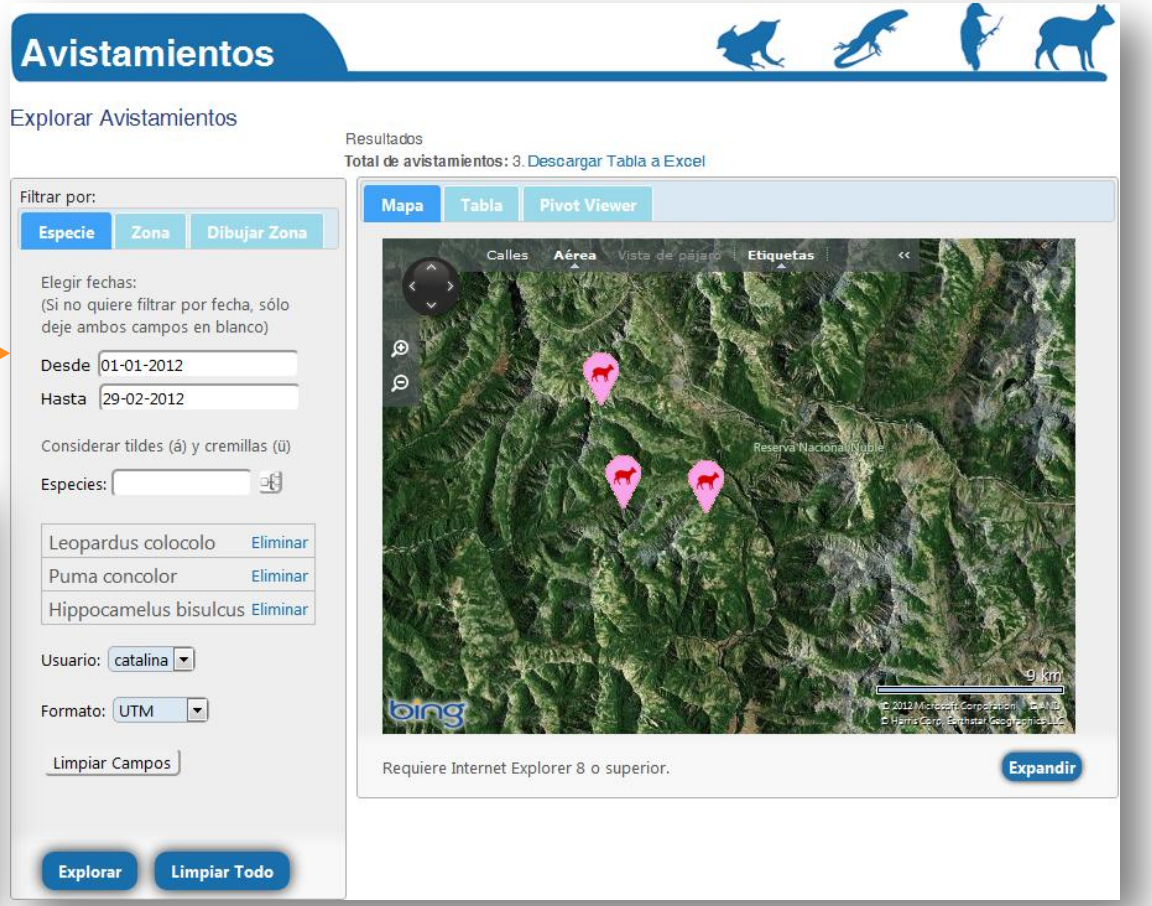
Mobile **C**loud **S**hared **S**pace (MCSS)

Study Case: Huemul (Hippocamelus bisulcus)





	A	B	C	D	E	F	G	H	I	J	K
1	Genero Especie	Epiteto Especie	Fecha Avistamiento	Hora	Tipo Avistam	Sexo	Edad	Cantidad	Comentarios	Easting	Northing
2	Leopardus	colocolo	12-01-2012	5:40	9	0	3	1		282329	589116
3	Puma	concolor	11-01-2012	9:20	9	0	3	1		276960	589632
4	Hippocamelus	bisulcus	22-02-2012	4:21	9	0	3	1		278202	589130
5											
6											
7											



Challenges

Currently, Live Andes is available with all terrestrial vertebrates of Chile and a searchable database by ecological, administrative and protected areas can be displayed for the whole country.

Future steps includes to add Bolivian and North American libraries and regions for data sharing and mapping.

Future Steps

- Partnership with Chilean Ministry of Environment
- National portals in other Latin America countries and a network with conservation programs
- Institutional portals: group statistics, data sharing controls, access to additional data
- Testing mobile application and testing loading data in partner countries.
- Citizen science: Wildlife conservation conferences, workshops in partners countries.

Citizen Science

Live ANDES Team

Principal investigator
Dr. Cristian Bonacic

Co-investigators
Rurik List (Mexico)
Luis Pacheco (Bolivia)
Andrés Neyem (Chile)
Renzo Angles (Chile)

Project Coordinator
Catalina Zumaeta

Software Development Coach
Ignacio Bastías

Current Developers
Andrea Vásquez
Augusto Miquel
Juan Domingo Pau
Rafael Alonso
Sebastián Moreno
Sebastian Fuenzalida
Antonia Allende
Mauricio Castro
Cristóbal Rojas

LiveANDES

video

Microsoft®

© 2012 Microsoft Corporation. All rights reserved. Microsoft, Windows, and other product names are or may be registered trademarks and/or trademarks in the U.S. and/or other countries.
The information herein is for informational purposes only and represents the current view of Microsoft Corporation as of the date of this presentation. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information provided after the date of this presentation. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS PRESENTATION.