

# Applying QAW, ADD and ATAM to conduct the architecture's evolution to Service Oriented Architecture

Marcelo Luna – Liveware IS  
Buenos Aires - Argentina

# Warming up...

*Perito Moreno's Glaciár – Patagonia - Argentina*

# A really big system...

- 5000 ATM's
- 14 Million of users
- Worldwide operation through partnerships
- More than 55 software apps



**720** Million transactions a year



# Motivation

- Modernization
- Solve current problems
- Build a more adequate Architecture
- Reduce the gap between Business and Technology
- Adopt some international standards





# THOSE questions

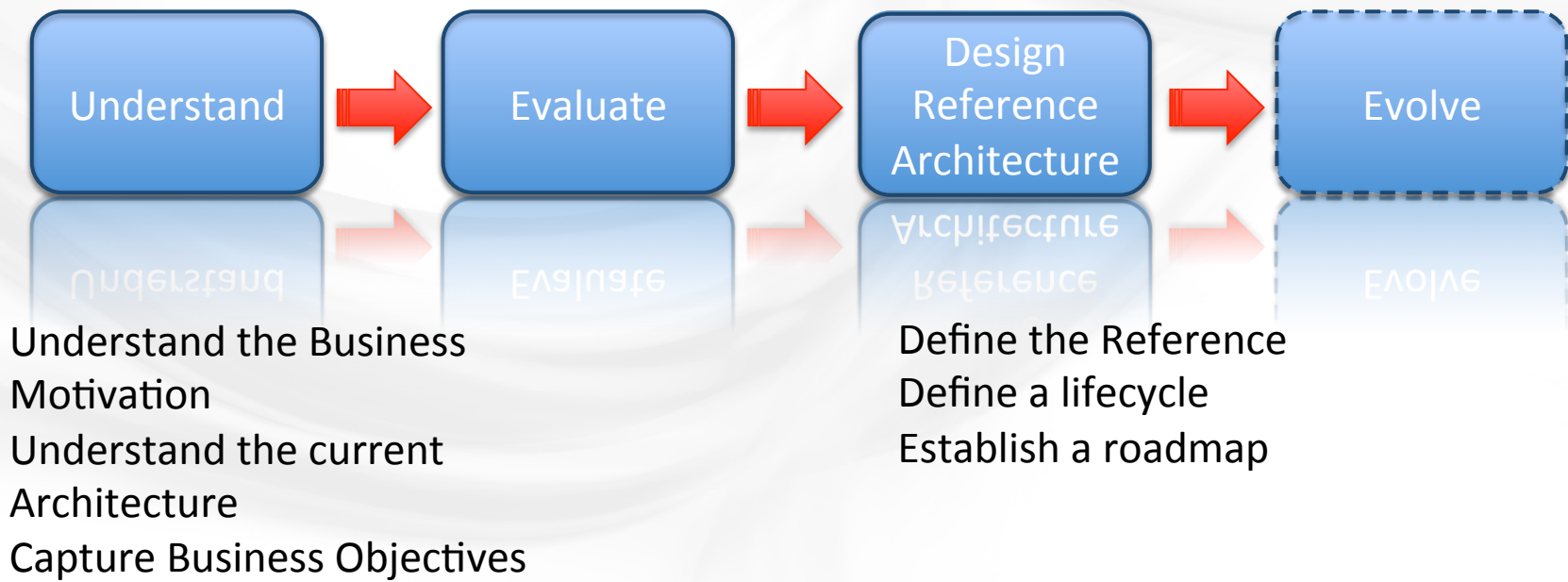
- “How adequate is the current architecture for the business?”
- “Which one would be an appropriate architecture for our business’ expectations?”
- “What is the precise scope of architectural changes?”
- “How can we build that architecture?”



# A complex system...a simple strategy

Define the Quality Model  
Capture Architectural Drivers  
Capture findings  
Prioritize problems

Future work...





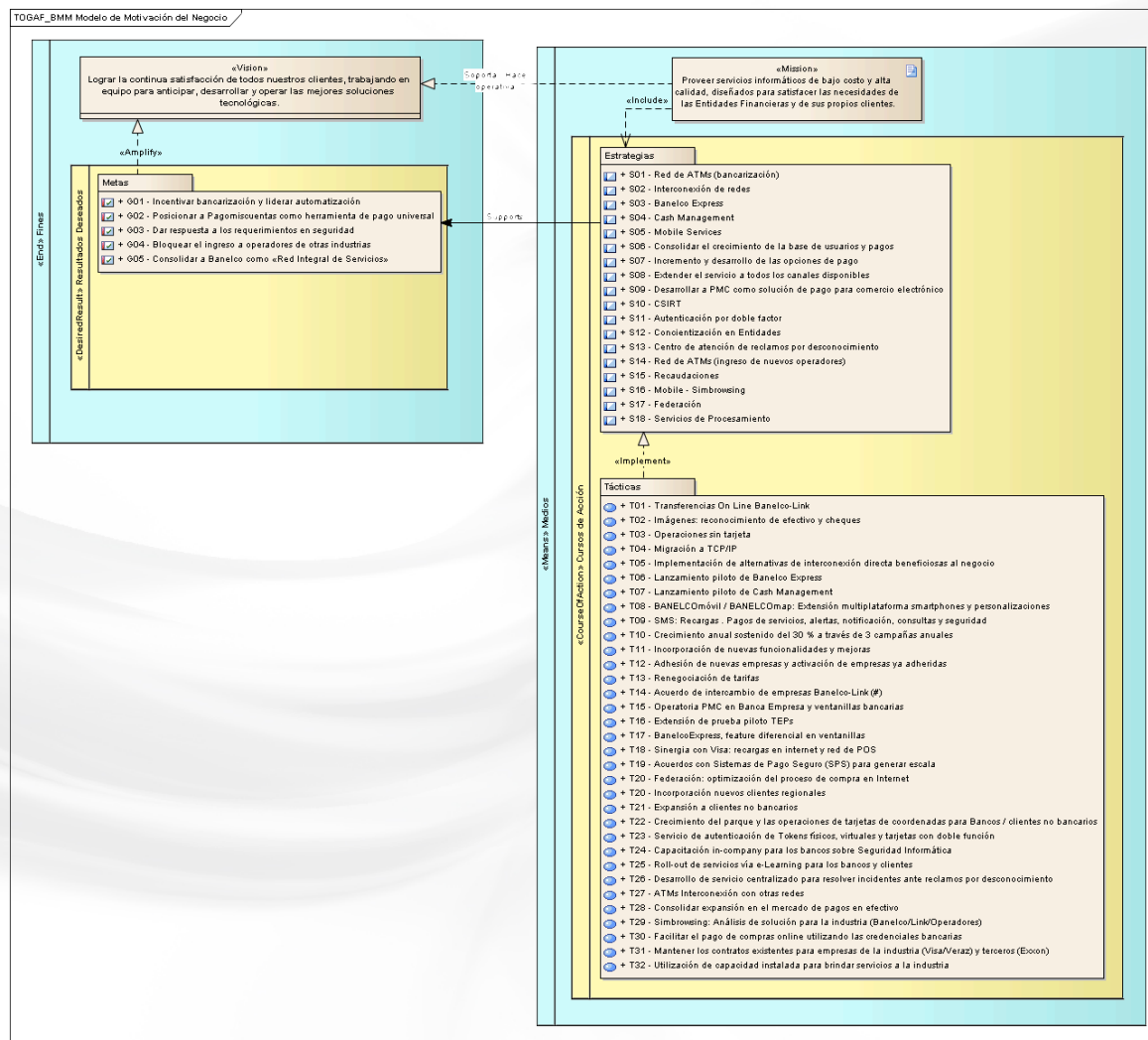
A wide-angle photograph of the Iguazú Falls in Argentina. The falls are a massive series of waterfalls cascading over a rocky cliff into a turbulent river below. The surrounding landscape is lush with green trees and vegetation. The sky is blue with some light clouds. The falls are framed by dark tree branches in the foreground.

Exploring...

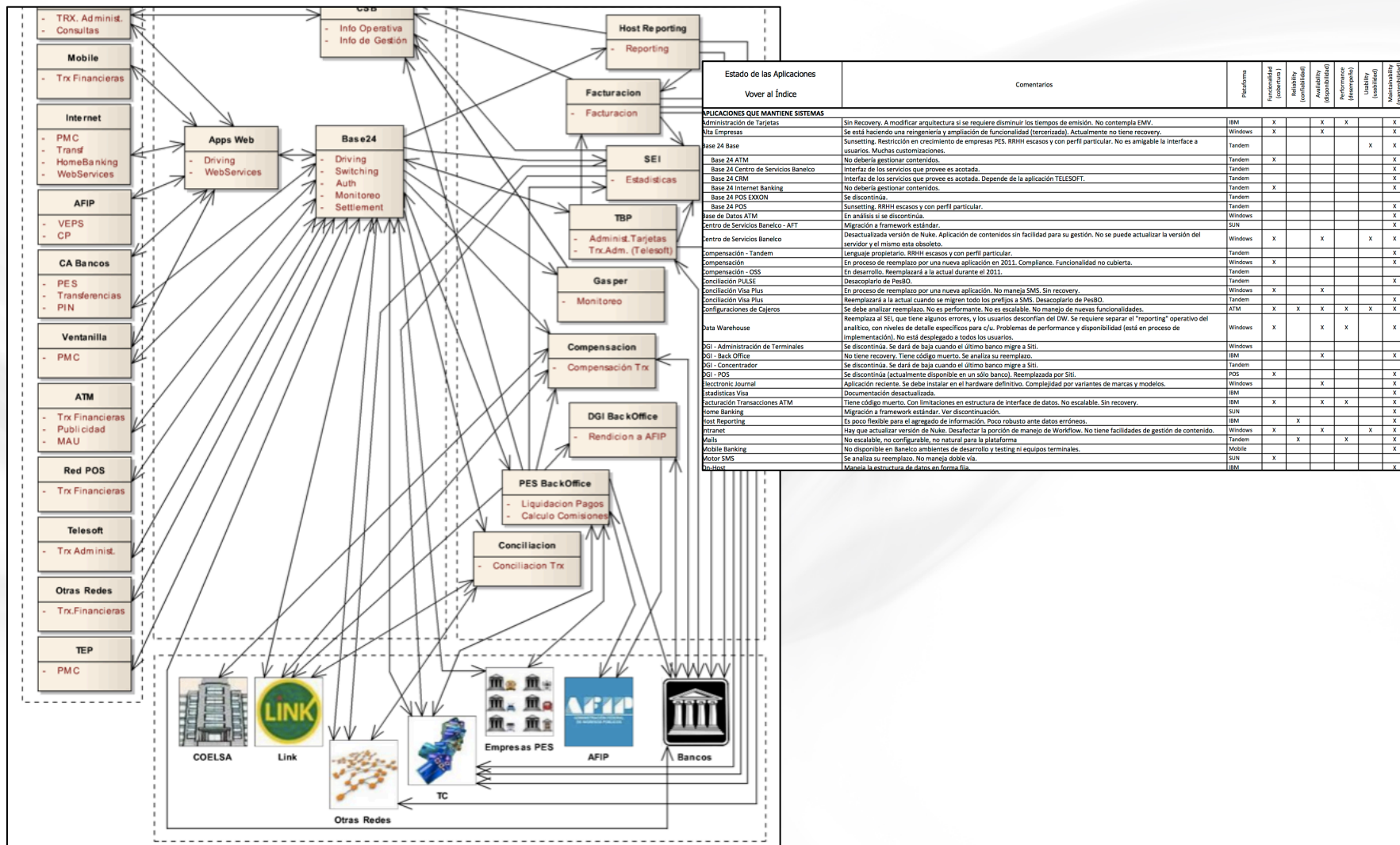
*Iguazú Falls– Misiones- Argentina*



# Business Motivation Model

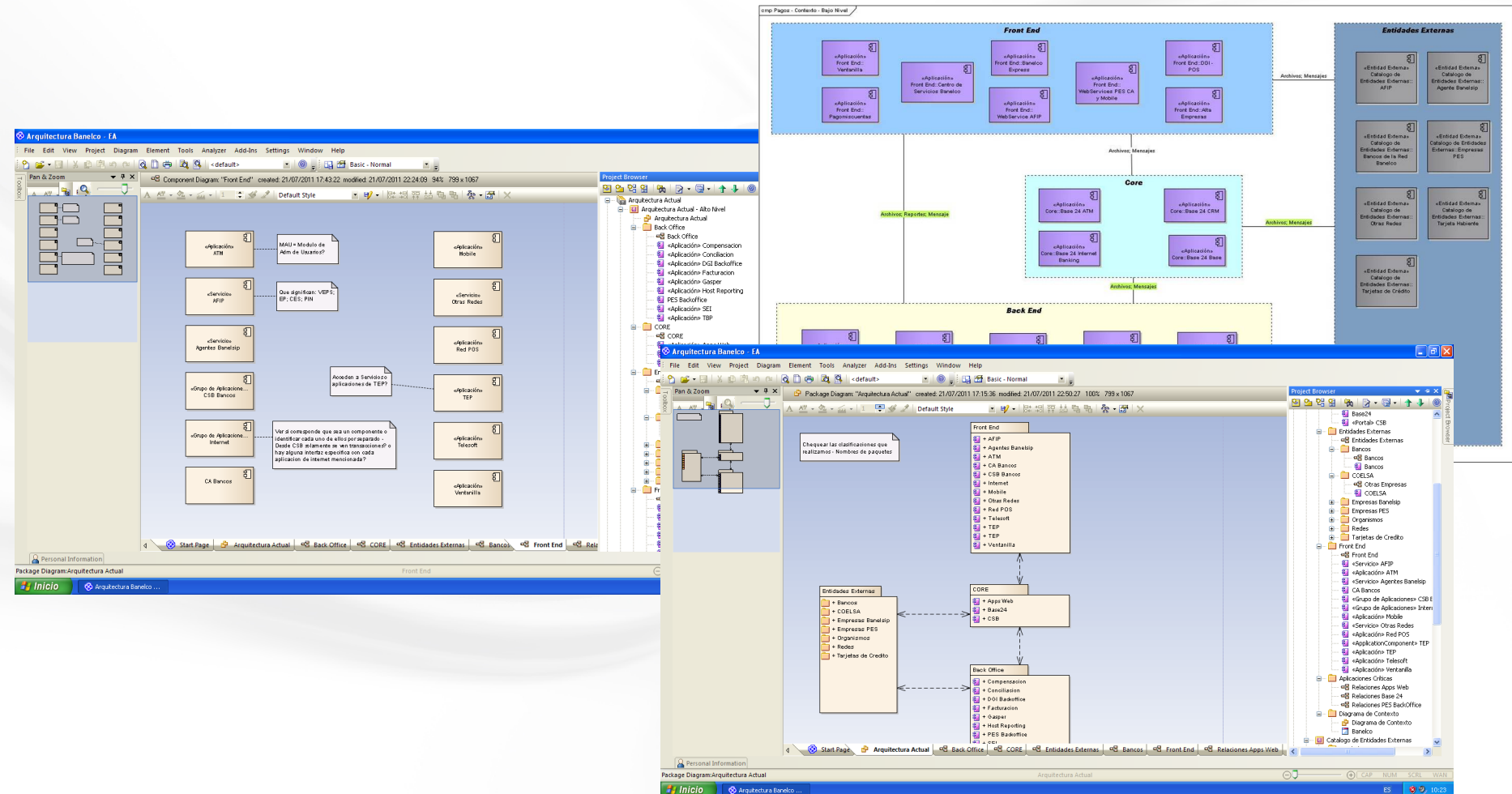


# Architecture documentation...





# ...”archeologized” documentation



# Crossing bridges...



*Women's Bridge – Buenos Aires - Argentina*

# Use of QAW - Focus on Business



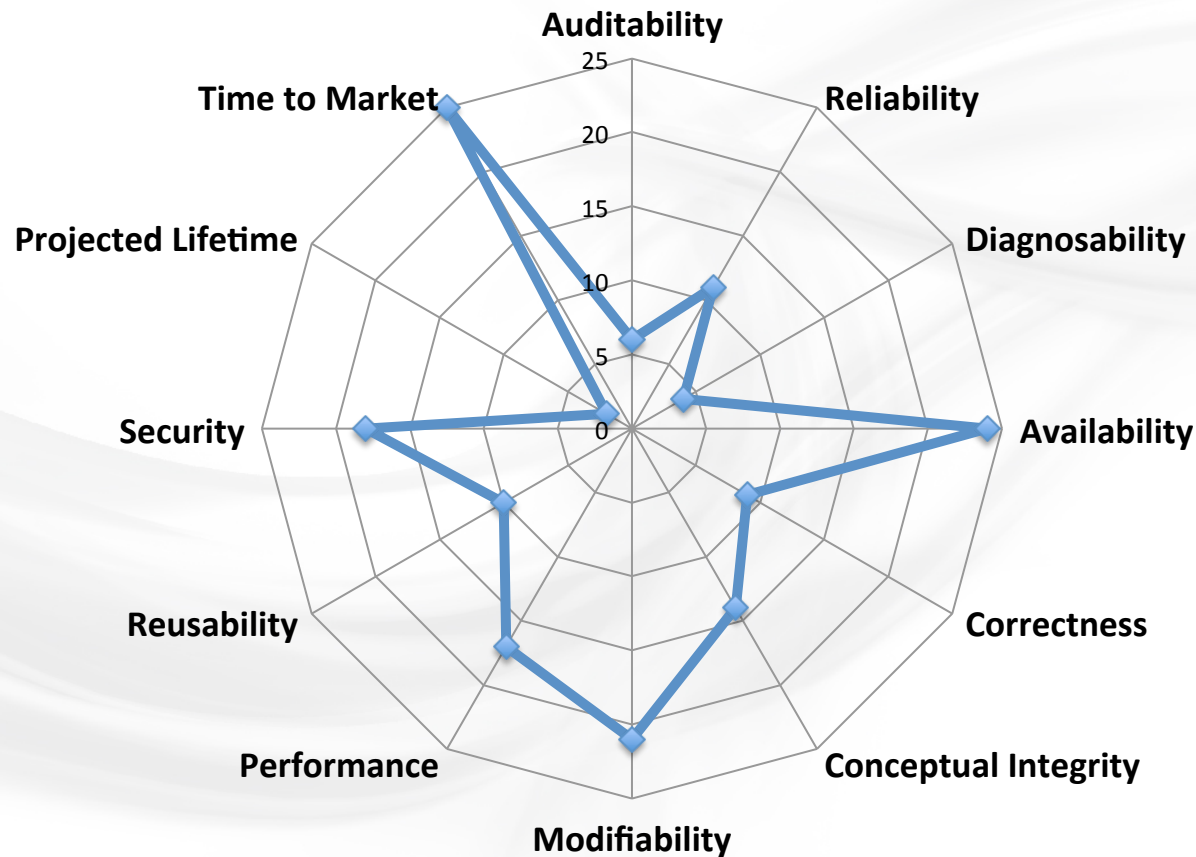


# BMM Analysis

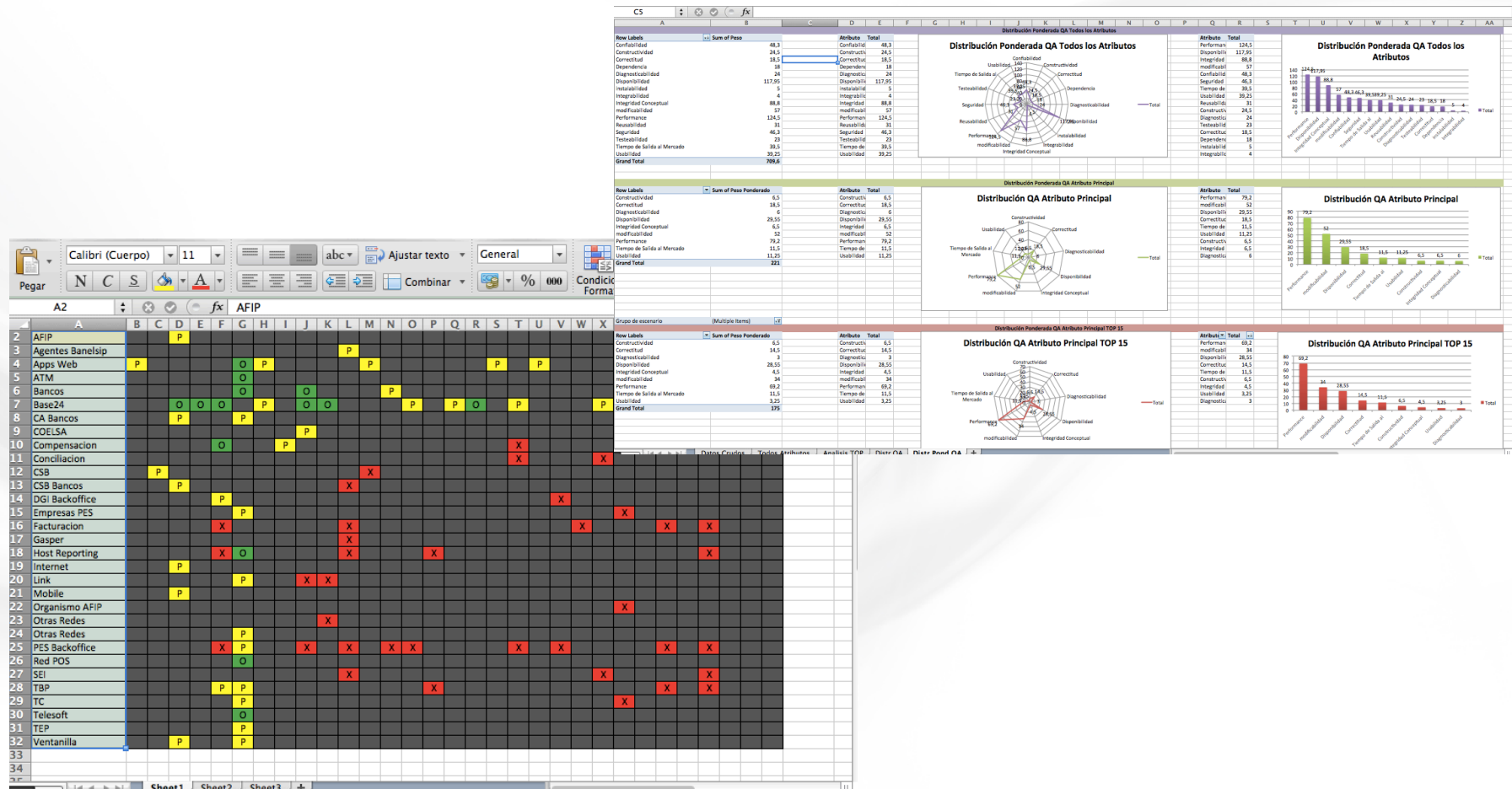
## Business Motivation Analysis with Scenarios



# Quality Model

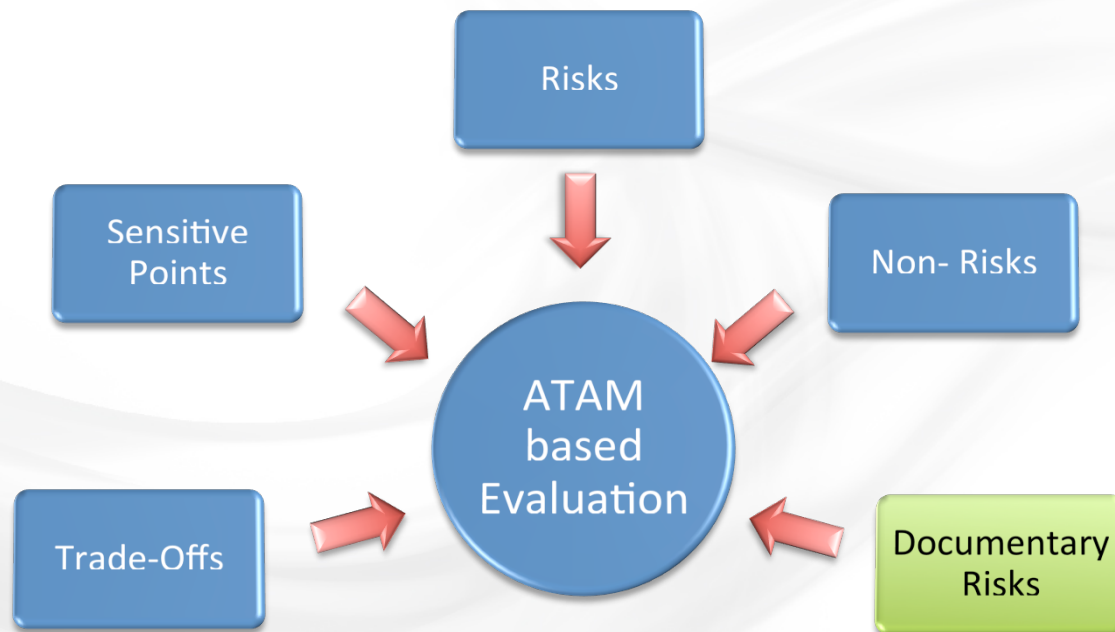


# Detailed analysis

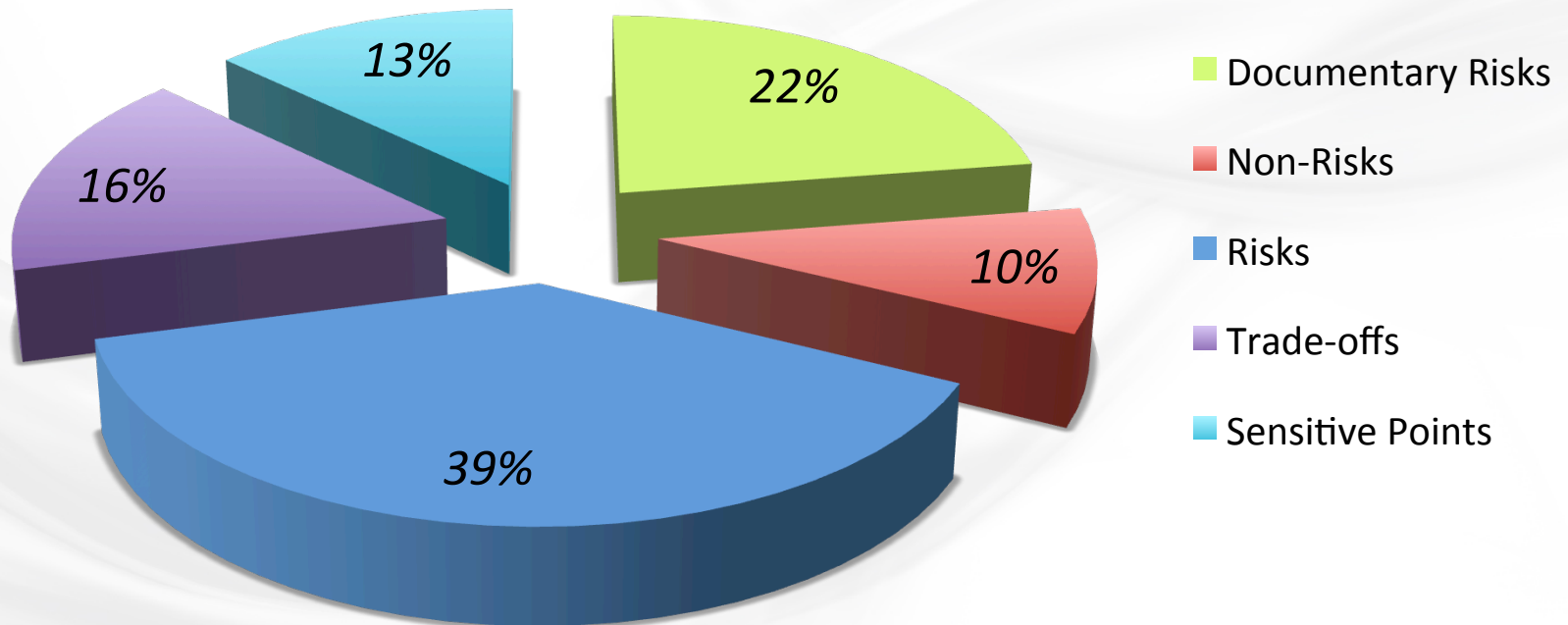




# Evaluation - ATAM



# Evaluation findings



# The architectural objectives...

- Define a Reference Architecture to satisfy the detected Architectural Drivers for the General Solution
- Define an Architectural approach for an specific part of de Solution, considering a different priority for the Drivers



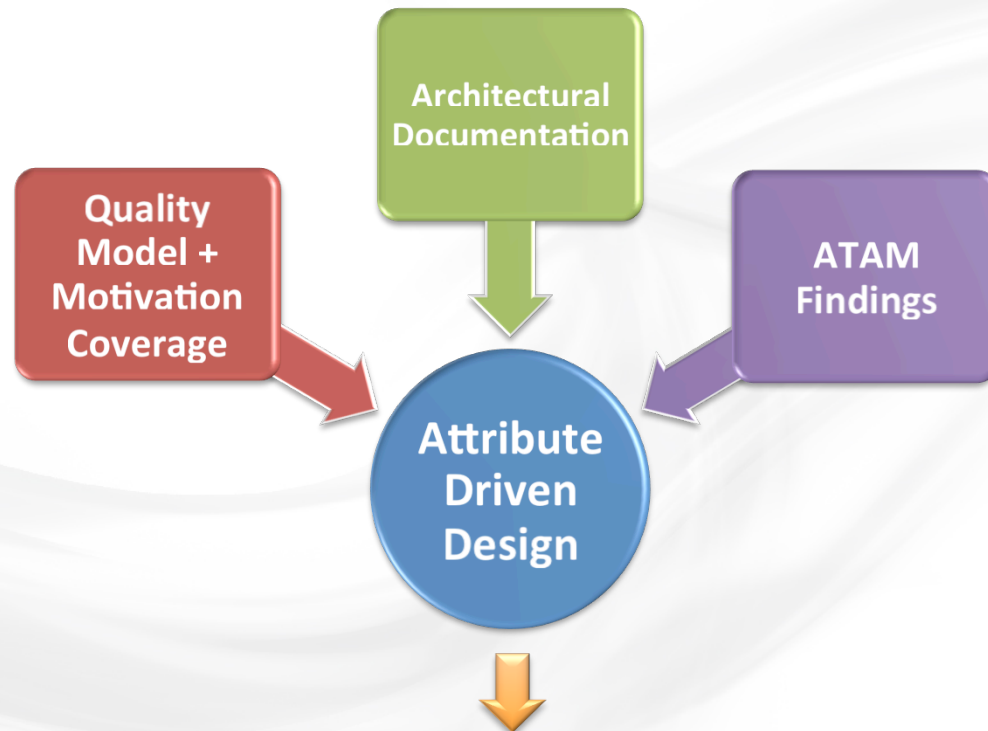


# Climbing the Mountain...

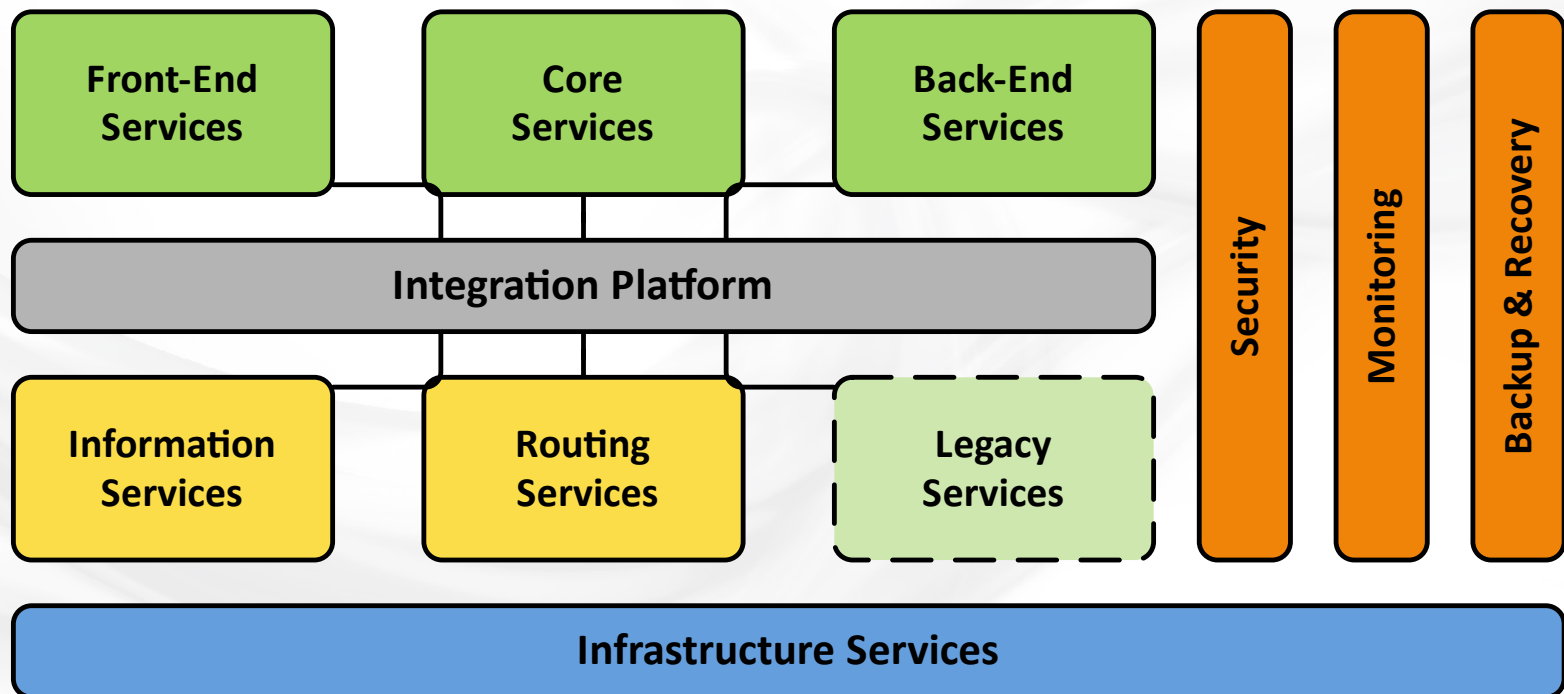
*Aconcagua Mountain – Mendoza - Argentina*



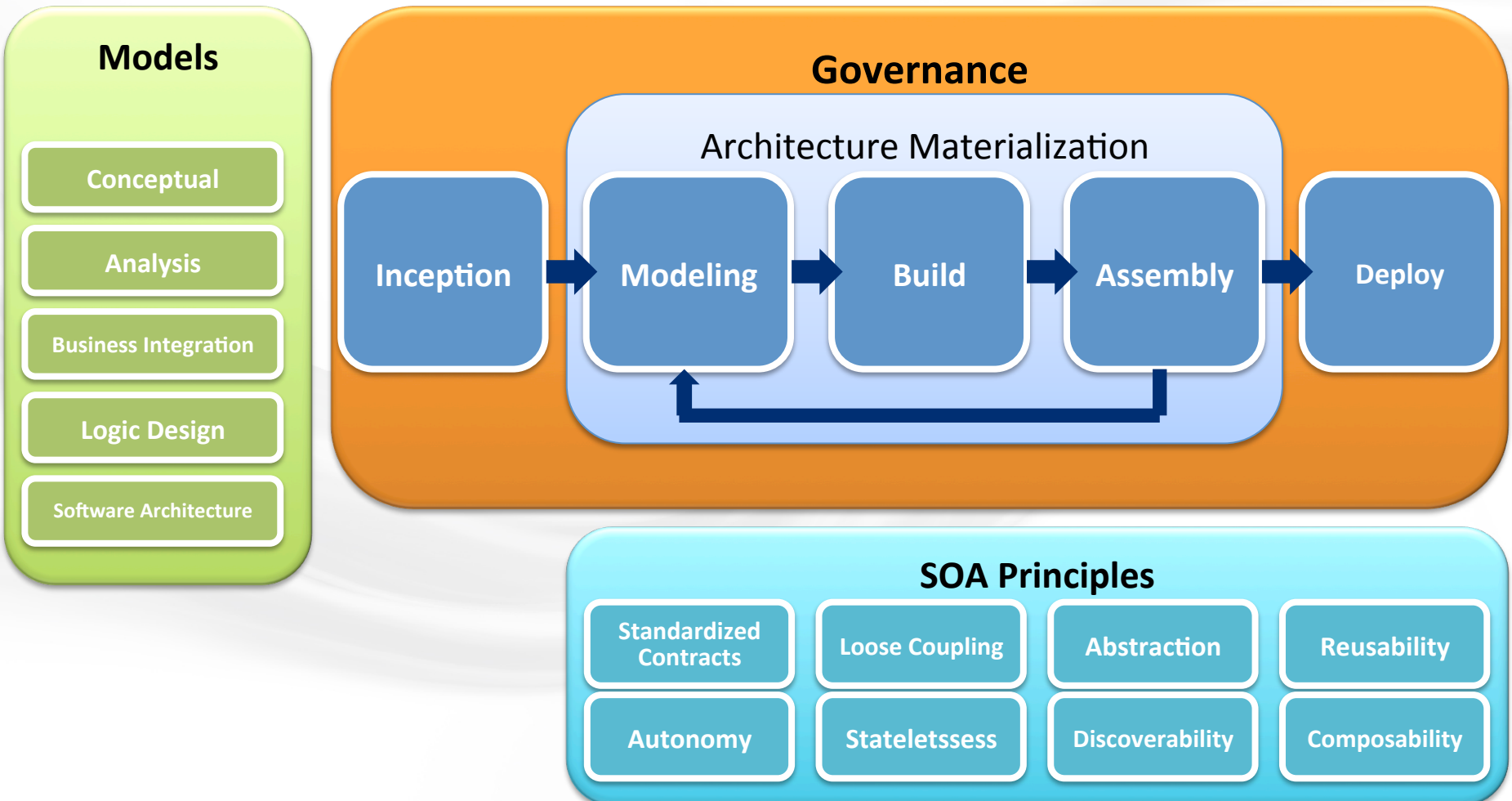
# Design - ADD



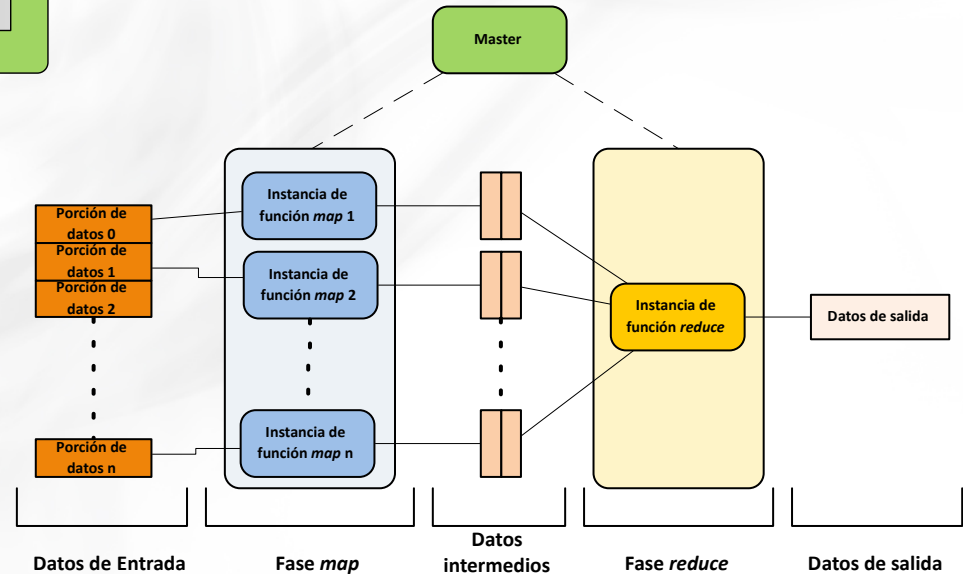
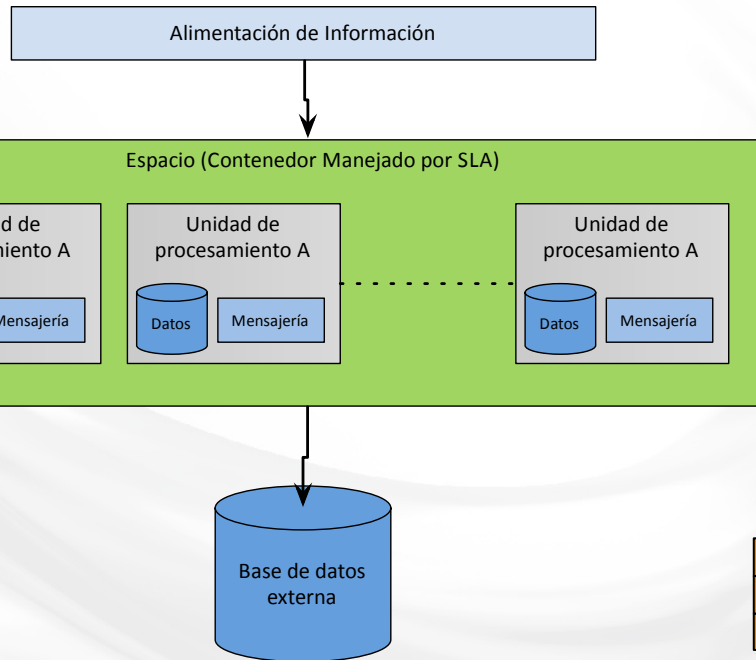
# The roadmap to SOA – Structure



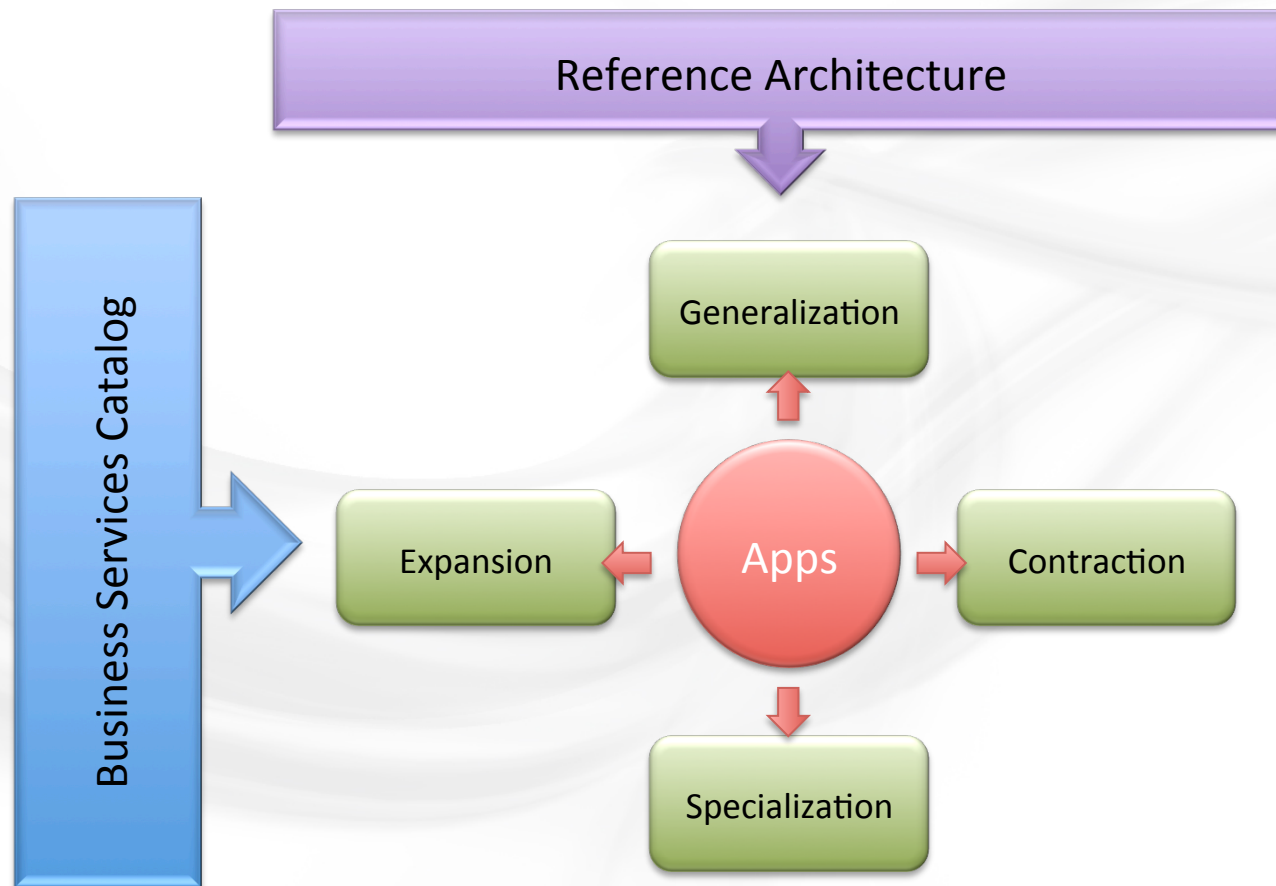
# The roadmap to SOA - Lifecycle



# Offline Services alternatives



# Reconverting Apps to SOA





# And at the End...

*Lighthouse at the End of the World– Ushuaia- Argentina*

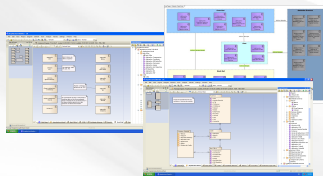
# Why



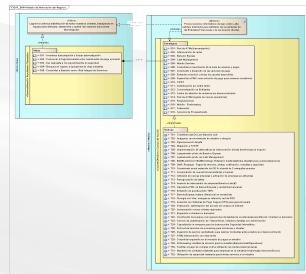
QAW

ATAM

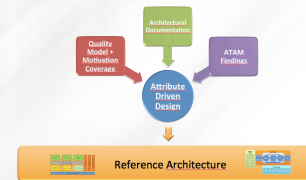
# How



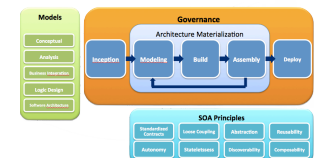
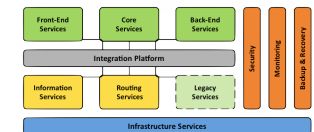
Current  
Architecture



BMM



ADD

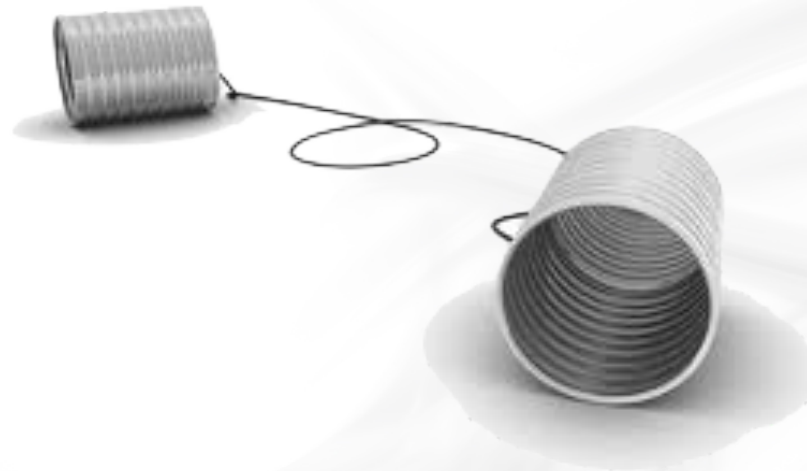


Reference  
Architecture

## Some conclusions...

- Using the methods in a big and complex business context was really useful
- The business' stakeholders were introduced in architectural activities seamlessly
- The results and the proposed architecture were robustly argued
- Concepts and principles were introduced to the organization early





[marcelo.luna@liveware.com.ar](mailto:marcelo.luna@liveware.com.ar)



[marcelo.luna@liveware.com.ar](mailto:marcelo.luna@liveware.com.ar)



[www.linkedin.com/in/mhluna](http://www.linkedin.com/in/mhluna)



[www.linkedin.com/in/mhluna](http://www.linkedin.com/in/mhluna)



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Marcelo H. Luna is a Senior Consultant, specialized on Software Engineering practices. He has been working on Liveware IS for 9 years, participating on several projects in Argentina, Brazil and United Kingdom. As part of Project teams, he have worked on evaluate, design and develop large system's architectures in different domains. Also, he has been teaching Software Engineering lectures in different universities for 20 years.