

Projects in detail

Projects in ZURICH INSURANCE

Establishing Enterprise Architecture in Zurich with TOGAF

In my current role in Zurich Insurance, the Head of Group Application Architecture, I am part of the Group Enterprise Architecture team working on establishing the group wide enterprise architecture practice based on the tailored TOGAF model. The problem we are trying to solve is establishing a common language between business and IT, and to demonstrate the value of Enterprise Architecture by establishing traceability across all domains to support end-to-end strategic planning. I was focusing on modeling my application architecture domain and linking it with surrounding domains (business, data and technology). Using UML (Class Diagrams) I captured elements such as Logical and Physical Application Components and defined attributes for each, as well as made connections with entities in other domains (to business capabilities, to technology components and to data components). The purpose of such meta-model is to model the way our enterprise works today and to identify elements/attributes of our enterprise that we would like to capture data about. Such model enables our company to see end-to-end state of the enterprise, linking business strategy and objectives to business capabilities and then further down to applications that support such capabilities and technologies that these applications depend on. With such a full view of our enterprise we can easily do impact assessment and create IT strategies and roadmaps.

Digital Brand Experience

The Digital Brand Experience (DBE) program delivered the Zurich Web Platform (ZWP), with the main focus to provide a global web content management system to rollout the flagship zurich.com website and the entire brand BU (Business Unit) country websites. ZWP streamlined the process of migration of old websites and creation of the new ones. The first deliverable (phase I) was zurich.com, started in December 2013. The second phase started in July 2014 where the focus was on the rollout of ZWP to support country websites. The solution that I designed delivered a master template, which was used for the business units' country sites to quickly create their local site instances. This gave Group Marketing governance over global look and feel and the ability to push out new features globally to all sites. At the same time, countries had control over local content, giving the local marketer the tools and platform to correctly target their markets. The digital brand experience was a critical component for business success with all of our constituents – a one Zurich global brand platform that was highly relevant to define and build a consistent customer journey with a state of the art digital experience.

I designed a framework called Zurich Web Platform that:

- Put in place a single global site architecture and best practice blueprint to support and guide local market efforts
- Implemented a state of the art WCMS that fully supports digital marketing and mobile user devices
- Had 18 conceptual building blocks to support requested capabilities

With ZWP, I met the objective to deliver a single global website architecture that is fully aligned to the Group branding strategy and is based on a single Group Web Content Management System (WCMS). Through the reuse of artifacts and assets, sites inherited the same look and feel, which ensured that our brand is standardized across the Group. Zurich.com was the master instance and all local country websites were clones (branches) of the master. The framework allowed all country sites to be moved to the single WCMS platform, which enabled us to decommission the old technology platforms and avoid punitive support fees.

My position: the lead solution architect.

Solvency II

Solvency II is a new set of regulations for insurers and reinsurers across the European Union (EU). Solvency II brings in a new focus on risk management and a different way of calculating the amount of capital that we, and our competitors, are required to hold.

When I started redesigning Solvency II solution, I followed several principles: "time to value", "reuse" and "reliance on available skills". For these reasons my solution was based on extending the functionality of the existing in-house built RMP (Risk Modelling Platform) system and team capabilities which has a certain advantages compared to other possible options such as: leveraging existing RMP system capabilities, single local Technical Team used to working closely with business, RMP system flexibility and extensibility, the lowest risk path to a consistent Solvency II compliant solution and leveraging existing project and process management maturity. The target architecture that I designed for Solvency II was based on the existing RMP architecture. However, this architecture was different to the available RMP architecture as few new elements had to be included and some existing had to be extended.

In creating the new target architecture I reused two major elements of the RMP architecture that proved to be fit for purpose:

1. Report generation via SAP Disclosure management is fully reused from the current solution
2. RMP calculation engine that is implementing Internal Model and Standard Model formulas is fully reused

Major improvement in the new architecture was removal of manual files upload (as shown on the left hand side picture) and replacement with automatic file upload from the source systems.

Architecture alternatives:

Before building a new Solvency II solution, I evaluated the typical vendors in this market:

1. SAP Insurance Analyser
2. Oracle Insurance Data Foundation
3. IBM with Algorithmics, OpenPages and Clarity
4. SAS solution

Due to time constraint we had (that was imposed by EU regulator), I believed that we didn't have enough time to consider these solutions in detail as it would mean an exhaustive process of executing a Request for Proposal (RFP) process including handling additional questions, proof of concepts, finalize the financial contracts (including implementation partners), technical installation of the solution (including security and access levels), functional configuration of the tool in accordance to the specifications and full data mapping of source data to the entity model and resolve definition issues.

My position: the lead solution architect.

PlanningIT

I was responsible for the overall Zurich's Group application landscape. I was using PlanningIT from Alfabet (now acquired by Software AG) to control the whole inventory of more than 3.500 applications used worldwide.

Commercial Pricing Platform (CompaZ)

Team size: 70

Duration: 4 years

Client: Zurich Insurance Company (<http://www.zurich.com>)

Commercial Pricing Platform is a global underwriting solution used for calculating technical premium price for Zurich's Global Corporate unit. It covers lines of business: Property, Financial Lines and General Liability.

I had the great opportunity to be involved in such a large project from day 1. When Global Corporate COO decided to sponsor creation of one global pricing platform for all lines of businesses, I was immediately appointed as the lead architect and was participating literally from idea to the roll-out in the production.

Following Zurich's guiding principle "Re-use before Buy before Build", my first step was to analyze current state of pricing applications used in Global Corporate. For that I produced a paper "Solution Inventory of Pricing Applications" where I collected and analyzed over 70 applications in used (from regular applications to excel spreadsheets). After concluding that none of existing applications are fit for purpose, I started evaluating off the shelf products that were in the market at that time. I covered 11 vendors and slimmed down the selection to only 2. With these two I organized on-site workshops where I invited business users (underwriters and actuaries), business analysts and chief architects to further evaluate these two tools in great depth. Prior to these workshops I created RFP (Request for Proposal) where vendors had to answer over 200 questions. After these RFP's and on-site workshops, we collectively decided that none of them is fit for purpose as the business requirements of Global Corporate were highly customized to Zurich's way of underwriting. That led us into the build phase.

I was working closely with a team of business analysts to collect requirements for Release 1 of CompaZ, which was pricing for Financial Lines line of business. I analyzed 37 use cases and additionally created a set of non-functional requirements. Once I got enough material in my hands, I started creating architecture specification. Architecture specification consisted of an extensive set of documentation accompanied by very details UML model that was created in Sparx Enterprise Architect tool. I specified everything, from the high level overview down to detailed sequence diagram for every use case. This model was used by Wipro (implementation partner in this project) to literally auto generate code skeleton based on my UML diagrams. They were writing code just in the body of generated methods. All class and method names and signatures were specified in the UML.

Way of Underwriting. It follows "underwriting chevrons" and is the full end-to-end underwriting workbench. Even though CompaZ started as a pricing tool only, in the meantime the scope grew to the full underwriting scope. The scope was covering steps of Info Gathering (about prospect customers), Risk Assessments (of Properties, Financial Lines – e.g. Directors and Officers, Motor Fleet), Account Structure & Coverage (setting up domestic or international coverage), Rating & Pricing (calculation of technical premium), Negotiation (amendments and adjustments) and Issue (final contract).

Information architecture was organized around internal and external data providers needed for CompaZ pricing engines. Underwriting and Customer Data Management were internal databases built specifically for CompaZ, RMS (Risk Management Solution) was external data provider of risk analytics that CompaZ was calling via web services, D&B (Dun&Bradstreet) was external batch feed that was providing data about companies' hierarchies and finally PlumZ was internal system providing real time data of property structures.

Application architecture followed modern 3-tier architectural design guidelines. I created "Web Application Development Standards" that described web application reference architecture, coding and naming conventions and many performance and best practice guidelines.

High level view of the solution design:

- Client Side Presentation delivered via Web Browser (component shows all the tools used). No business logic stored in the presentation layer. All logic queried via services (API/webservices) from the business layer.
- Business layer core application created in C#.NET / ASP.NET and hosted on IIS application server. Business services split into several subcomponents.
- Integration with internal and external systems: pricing tools on EASA server (for Financial Lines tools) and on TIBCO server (for Property tools), reporting done via Business Objects, authentication done via Global Active Directory, integration with RCT for centralized customer management, integration with RMS for geocoding and modeling, integration with external data provides (D&B and RMS) and integration with few other internal back office systems.

My position: the lead solution architect and the technical lead of a team of 60 offshore developers (in Bangalore, India) and 5 people in London.

	<p>Mid Market Pricing</p> <p>Team size: 6 Duration: 6 months Client: Zurich Insurance Company (http://www.zurich.com)</p> <p>End to end pricing platform for medium size companies (revenue<100m).</p> <p><i>My position: the lead solution architect.</i></p>
	<p>Natural Catastrophe System</p> <p>Team size: 10 Duration: 8 months Client: Zurich Insurance Company (http://www.zurich.com)</p> <p>This system is used for gathering property information of Zurich's Global Corporate clients and was mapping them to risk zones.</p> <p><i>My position: the lead solution architect.</i></p>

Projects in YOUNG CULTURE	<p>Vontobel Research Information System</p> <p>Team size: 3 Duration: 12 months Client: Bank Vontobel (http://www.vontobel.com)</p> <p>RIS is a Web-based application used for manipulation of research-related documents. It has a complex distributed architecture with presentation server based in-house while database backend is based in other partner company. By using SOA, we have managed to establish bidirectional communication between these two companies. Some of the technologies used on this project are: Java EE, Avalanche, DWR, FreeMarker, XFire, Apache VFS, OSCache.</p> <p><i>My position: a developer.</i></p>
	<p>Cyclone Middleware Search Engine Integrator</p> <p>Team size: 8 Duration: 1.5 years Clients: Bank Vontobel (http://www.vontobel.com), Helsana Versicherungen AG (http://www.helsana.ch)</p> <p>Cyclone is a universal search middleware, simultaneously usable by several applications. It is an integration layer with unique API which can enable different applications to use same search protocols with different underlying core search engines like Lucene, Egothor, FAST, Google Search Appliances etc. Some of the technologies used on this project are: Java EE, JSF, Lucene/Egothor.</p> <p><i>My position: the lead solution architect.</i></p>
	<p>Avalanche Web Framework</p> <p>Team size: 3 Duration: 7 months Clients: Bank Vontobel (http://www.vontobel.com), Guidle Company (http://www.guidle.com)</p> <p>Avalanche is a component-oriented JEE web framework, developed for data acquisition from various data sources (databases, proprietary CMS, file systems, web services etc.), as well as for processing and presentation. Avalanche is based entirely on AJAX, and represents an outstanding alternative to highly complex web frameworks that are difficult to master.</p>

Avalanche introduces a genuine coding-by-conventions concept into web development. This concept is virtually custom-tailored for teams with a strict developmental segmentation: web designers, prototypers, customizers and system integrators can work simultaneously on the same project and concentrate on their areas of expertise without having to acquire other technologies knowledge. Some of the technologies used on this project are: Java EE, DWR.

My position: the lead solution architect.

Webmanager CMS

Team size: 20

Duration: 7 years

Clients: Bank Vontobel (<http://www.vontobel.com>), Phonak (<http://www.phonak.com>), Bank Julius Bär (<http://www.juliusbaer.com>), AIG Privatbank (<http://www.aig.com>), Helsana Versicherungen AG (<http://www.helsana.ch>), Progrés (<http://www.progres.ch>), Zurich Schweiz (<http://www.zurich.ch>), Interroll Management AG (<http://www.interroll.ch>), SNV Schweizerische Normen Vereinigung (<http://www.snv.ch>) etc.

Webmanager is a high performance CMS software for planning and administration of complex internet and intranet portals. It is focused on banks and insurance companies because it offers variety of modules specific to their business needs. The essential characteristics of webmanager® at a glance:

- «wysiwyg» publishing and template creation
- Publishing workflow
- Version tracking
- Time-regulated publishing
- Administration of several websites (various internet appearances, intranet, extranet)
- Multi-lingual
- Integrated user management
- Direct ADS/LDAP interface
- Single Sign On (SSO)
- Personalization
- Import/Export interfaces (WebDAV, LDAP, JDBC, XML, etc.)
- Disclaimer administration
- Digital asset management (images, multimedia, documents)
- Easily usable template management

Some of the technologies used on this project are: Java EE, ColdFusion, Oracle.

My position: a developer.

Smith Application Server

Team size: 6

Duration: 1 year

Client: Smith is open-source product (<http://www.smithproject.org>)

Smith is a platform-independent ColdFusion engine, written entirely in Java. It requires Java Runtime Environment and Java servlet containers, runs on practically every operating system and works with any web server. Smith represents a trim but nonetheless reliable alternative to existing ColdFusion servers. Smith supports the crucial ColdFusion-functions and already controls a number of large ColdFusion applications.

By virtue of this deep integration in J2EE, Smith is part of the Java web application, and can be used with servlets and JSPs. Server configuration is

	<p>possible via a web interface in which data base connections, debugging options and server mapping among other things can be adapted.</p> <p>Some of the technologies used on this project are: Java EE, ColdFusion.</p> <p><i>My position: a developer.</i></p>
	<p>Guidle</p> <p>Team size: 15 Duration: 1 year Client: Guidle company (http://www.guidle.com)</p> <p>Guidle is a community-platform that provides easy search for any kind of event or point of interest - hotels, restaurants etc.</p> <p>Some of the technologies used on this project are: Java EE, JSF, Lucene, Cyclone, DWR.</p> <p><i>My position: a developer.</i></p>

Projects in DIOSPHERE	<p>Diomedia Document Management System</p> <p>Team size: 7 Duration: 3 years Clients: SuperBild (http://www.superbild.de), QuickImage (http://www.quick-image.com), DioMedia (http://www.diomedia.com)</p> <p>DioMedia is a distributed content management system for stock photography agencies. It covers Web interface for online showing and searching stock photography, Web administration as well as desktop application for importing, manipulation and exchange of various digital assets – photographs, video clips/movies, illustrations, fonts etc.</p> <p>Some of the technologies used on this project are: Java EE, EJB 2.1, JRun, Lucene, Spring, iBatis, MS SQL Server.</p> <p><i>My position: a developer.</i></p>
	<p>Sun Gaming</p> <p>Team size: 15 Duration: 1 year Client: Sunny Group (http://www.sunnygrp.com)</p> <p>System for online gambling using Internet, PDA devices and mobile phones. Project covers the complete gambling process with server application, client interface for 10+ mobile phone versions, Internet + PDA interface, credit and scratch card payment processors as well as back office application for data monitoring.</p> <p>Some of the technologies used on this project are: Java EE, JME, C++.</p> <p><i>My position: a developer.</i></p>

Projects in SIEMENS	WPE Analyzer Team size: 10 Duration: 6 months Client: Siemens (http://www.siemens.de) This is a UNIX server's performance analyzer. It is an application for acquiring, graphical showing and manipulation of testing results of Web site applications from all around the world. It covers response, routing, delay and working time. It is used mainly in testing online bank systems, because of their specific mission critical requirements. Some of the technologies used on this project are: Java, JBoss application server, JSP, servlets, Perl, CGI, PostgreSQL, Apache, Tomcat. <i>My position: a research assistant.</i>
	OMNet++ Network Simulation Team size: 12 Duration: 3 years Client: Siemens (http://www.siemens.de) Developing TCP/IP module used in simulation of LAN / WAN networks in OMNet++ simulation project. To develop this module, complete and throughout knowledge of TCP protocol was needed. One module for LAN/WAN networks simulation project. Some of the technologies used on this project are: C++, OMNeT++. <i>My position: a research assistant.</i>