

The Actuarial Advantage at Ohio National

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Overview

- ◆ Ohio National: Headquarters in Cincinnati, Ohio



Past & Present

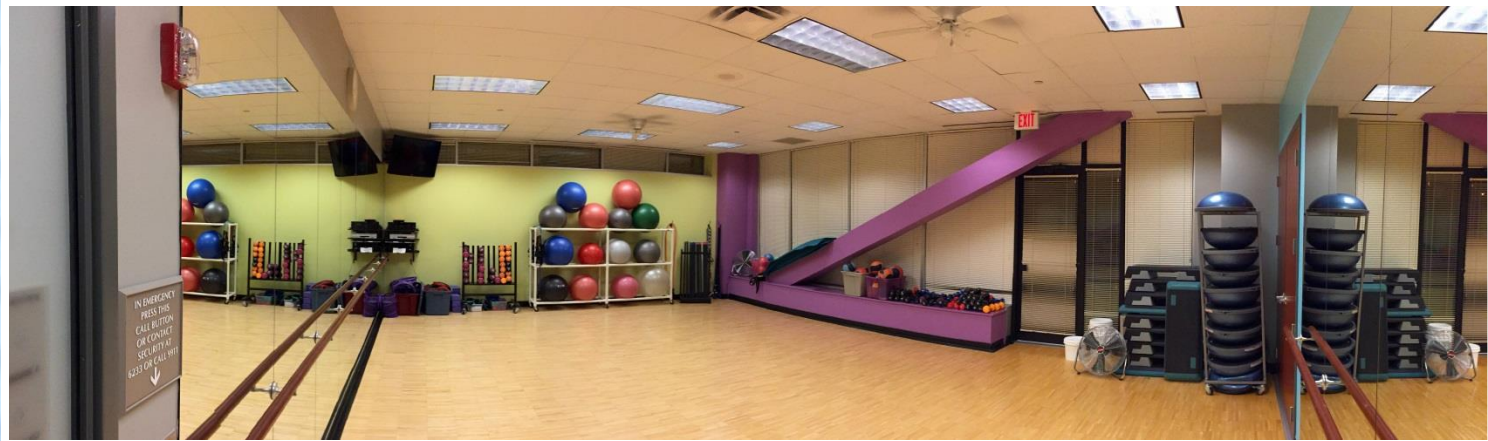
- ◆ Founded 1909 as a stock company
- ◆ Converted to mutual in '59, then to mutual insurance holding company in '98
- ◆ K2 – strategic growth plan (2013 – 2018+)
 - ◆ Increased hiring / infrastructure
 - ◆ Roughly 35 → 73 actuaries in ~6 yrs
 - ◆ Grow sales in most products; Increased focus on Retirement Plans/Disability Income
 - ◆ New products, international business



Facilities: Dining



Facilities : Recreation



Actuarial Departments at ONFS

- ◆ Product Development
 - ◆ Annuity
 - ◆ Life Insurance
 - ◆ DI (Disability Income)
 - ◆ International
- ◆ Corporate Actuarial
 - ◆ Financial Reporting
 - ◆ Special Projects
- ◆ Enterprise Risk Management
- ◆ Capital Management
- ◆ Actuarial Programming



Corporate Actuarial: Reserving & Populating Financial Statements

- ◆ With our products, policyholders pay premiums in exchange for promises.
- ◆ These promises are typically fulfilled years (sometimes decades) after those premiums are collected.
- ◆ What do we do with the premiums we've collected in the meantime?

Corporate Actuarial: Reserving & Populating Financial Statements

- ◆ Old “canned” immediate annuity valuation model from the 1980’s. Known issues, but limited transparency, no flexibility.
- ◆ Transition to MG-ALFA software. How do we incorporate our data into ALFA?
- ◆ Can we hook up ALFA output to downstream processing & control environment?

Enterprise Risk Management: Using Models to Inform Upper Management

- ◆ Some stocks pay a dividend, some whole life insurance does too.
- ◆ Dividends allow policyholders to participate in the gains of the company they've invested in.
- ◆ Higher rates are attractive to the investor, but can be costly to maintain.
- ◆ Dividend rates can be changed periodically.

Enterprise Risk Management: Using Models to Inform Upper Management

- ◆ Since the financial crisis, interest rates have been historically low, but dividends have not entirely fallen with them. Why?
- ◆ Actuarial executive asked ERM to measure the impact of different patterns of dividend cuts.
- ◆ Using MG-ALFA modeling software, I tested a variety of cuts and provided results to senior management to support their decision.

Intern Project 1 – Model Formula DB Comparison

- Comparing/contrasting two ALFA model Formula DB's
- Went into the programs and found all the differences between the two models
 - ◆ Could be small differences like spelling, or bigger ones like different formulas
- Transferred this information into an excel document in order to sort through important and not-so-important aspects
- Important to note the differences in equations because they will affect the projections that are run differently



Intern Project 2 – Automated VA Reports Using VBA

- ◆ Next project was to create automated/reformatted VA reports for different ALFA variables (VA features called riders)
- ◆ Used VBA to pull a file, copy and paste itself, and then calculate different points of data
- ◆ Automated way to take output from ALFA and put it in a standardized and easily readable format
- ◆ Quicken the pace for ERM to analyze their runs and see if there are any outstanding errors or outliers in their data
- ◆ Created a uniform template to present results in a clear format
 - ◆ So that data can be easily updated from quarter to quarter



Some Challenges/Successes

- ◆ Came into this internship not knowing much about what an actuary does daily or what the insurance industry was all about
- ◆ One challenge I faced was using the different software related to each project
 - ◆ Had never heard of ALFA before until I came into the internship, which was the software I would be working with for the entirety of the summer
- ◆ When given the VBA project, I found that some of the topics I had learned in CSE and other computer classes were very helpful towards completing the project
- ◆ Have a deeper understanding of the insurance field as a whole

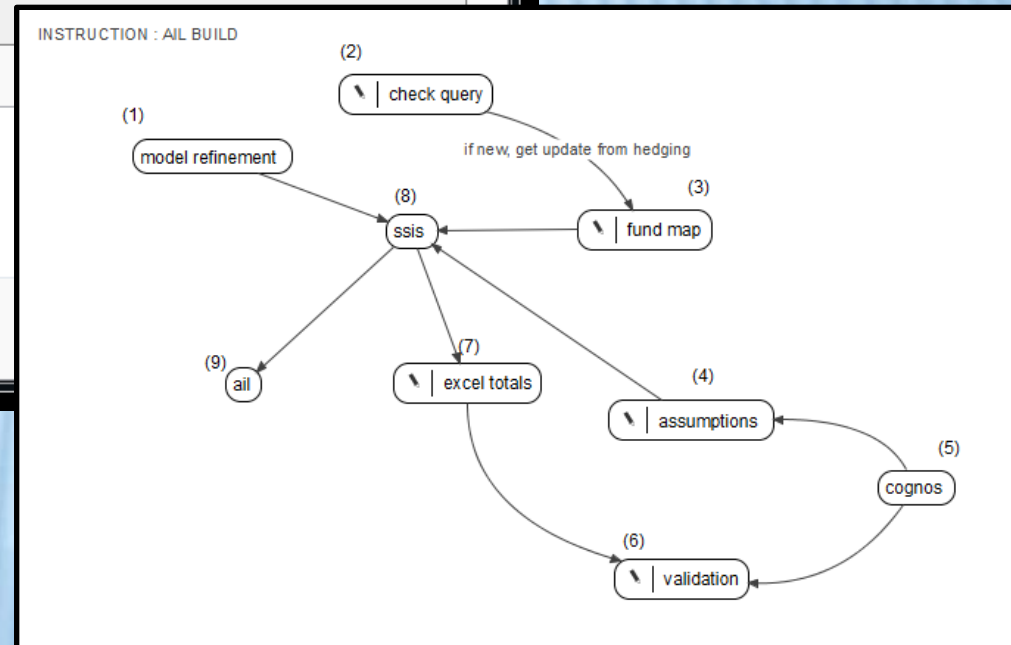
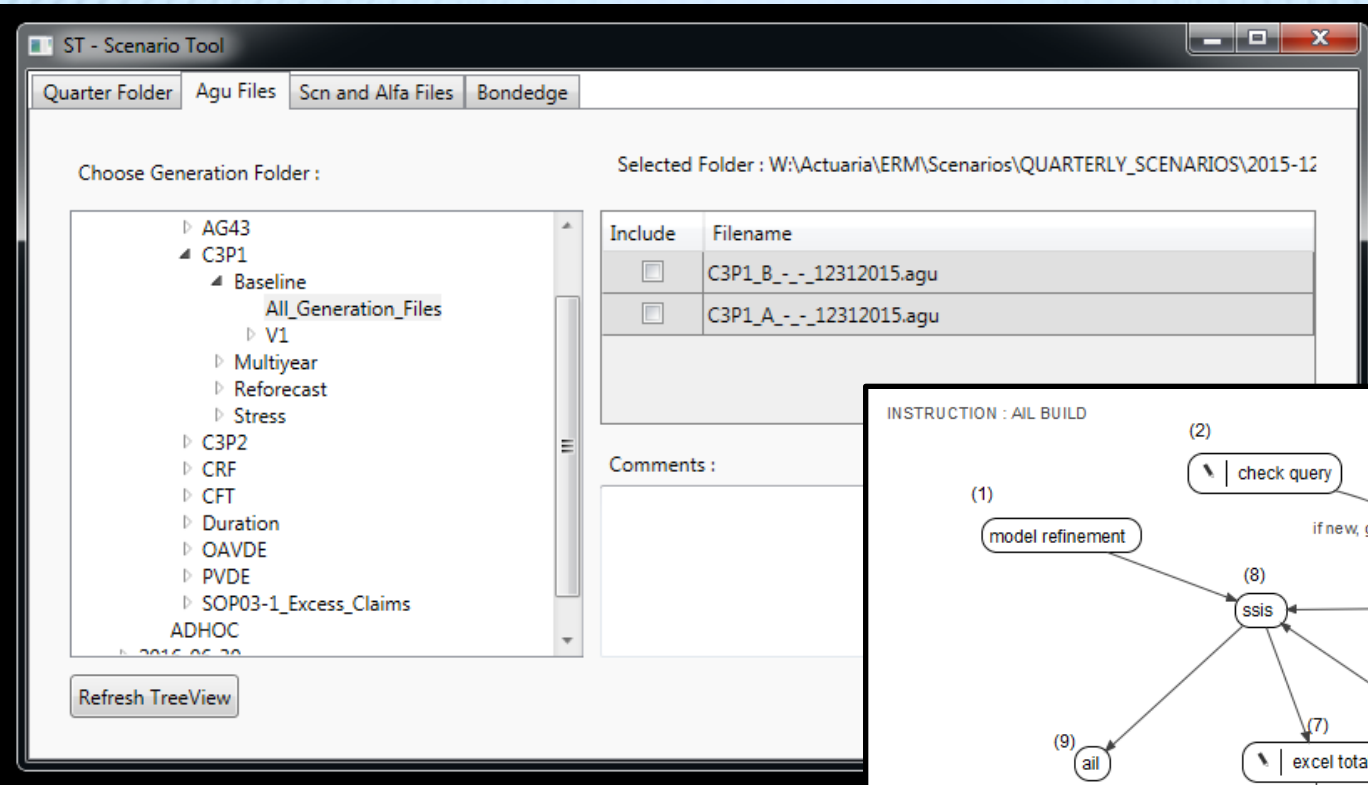


ERM: Model Support

- ◆ Quarterly updates to **8 primary models** (vary by product) that need updated quarterly
- ◆ **“Quarterly” input** includes: portfolio data (e.g. bonds, CM), policyholder data, scenario data, cashflows from structured products
- ◆ Maintain automatic **ETL operations**, manually process inputs, **design new solutions** (e.g. standard file formats to proprietary formats)
- ◆ **Tools: SQL** (W3Schools.com), Microsoft BI packages, SVN source control, C# .NET Framework, **batch scripting**
- ◆ R & D – **automation tools for models** (e.g. versioning, scripting model runs, moving scenario development from Excel to C#)



ERM: Model Support Examples



Capital Management: Projecting Required Capital

- ◆ Provide end of year **“required” capital projections**
- ◆ **Fluctuations in future liabilities and assets** imply calculating a “minimum” amount of capital
- ◆ **“Capital charge”**, or required amount broken down by **risk categories**: Asset, Insurance, Interest Rate, etc.
- ◆ Different Capital Formulae:
 - NAIC RBC System**: Factor Based then apply covariance formula, TAC/Required
 - Rating Agency** Determined
 - Internal** Solvency Model
- ◆ Company Action, Regulator action, Rating

<u>Type\Quality</u>	<u>Charge for</u> <u>Bonds</u>
Fed Govt. Bonds	0.0%
Class 1 (Highest)	0.3%
Class 2 (High)	1.0%
Class 3 (Medium)	2.0%
Class 4 (Low)	4.5%
Class 5 (Lower)	10.0%



ONFS Actuarial Study Program

- ◆ Ohio National paid study time
 - ◆ 110-130 hours depending on length of exam
 - ◆ Study time for VEE's and modules as well
- ◆ ONFS will cover study materials, registration fees for VEE's, FAP Modules, and FSA Modules
- ◆ Exam fees 100% covered for 1st sitting
 - ◆ After 1st sitting fees will be reimbursed 100% upon passing
- ◆ Salary increases after passing of exams and assessments

Questions

◆ Contact Information for Presenters

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◆ Additional Resources

- ◆ <http://www.beanactuary.org>
- ◆ <http://www.soa.org>
- ◆ <http://www.actuarialoutpost.com>
- ◆ <http://www.ohionational.com>

