AN EXCEL-BASED DATA EXCHANGE (EBDEX) FOR UNIFORM FORMATTING OF REINSURANCE SUBMISSIONS

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REINSURANCE SUBMISSION DATA

- Reinsurance submissions include data that actuaries use to price insurance, but although brokers make a an effort to present data consistently across accounts, each account inevitably conveys data in substantially different formats.

- Often the bulk of the pricing actuary's time is spent formatting data for company-specific tools.

- Excel-Based Data Exchange (EBDEx) can be used to create submissions with consistently formatted data that's presented in a way the actuaries will likely process more efficiently.

INFORMAL POLL

- In the course of pricing reinsurance, what percentage of your time is spent manipulating data before you apply actuarial techniques?

  - 20%

  - 40%

  - 60%

  - 80%

WHAT IS EBDEX?

- In 2010 I joined the CAS Committee on Management Data & Information, which proposed a project to streamline reinsurance submissions. I volunteered for the subcommittee and developed EBDEx.

- EBDEx is essentially a naming convention that I found useful to reference in standard Excel functions and VBA code.

- Data is contained in Excel ranges with optional restrictions.

- An Excel file with EBDEx tables combines the functionality of a traditional database with the accessibility of Excel.

EBDEX TABLE STRUCTURE

- A valid EBDEx table consists of two named ranges:
  - The name of the data begins with "tab"
  - The name of the column headers begins with "hdr"
  - After the prefixes, the names are the same
  - Both names are worksheet-level
- For example, a table of large losses might use the names "tabLargeLoss" and "hdrLargeLoss"

EBDEX STANDARD FIELDS

- The only restriction on column headers: There can be no repeating column headers in an EBDEx table (similar to a database)

- A certain set of column headers are considered "Standard." These Standard fields may impose restrictions in terms of

  - Whether an entry must be a value (number or date)

  - Whether the entry must be from among a subset of entries specific to that field

  - Formatting

EBDEX STANDARD TABLES

- A "Standard" table is one that includes certain Standard fields.

- Standard EBDEx tables contain data that is most frequently used to price reinsurance, like large loss listings, historic rate changes, etc.

- Standard table requirements can include one of several types of fields. For instance, an Individual Loss table requires the fields

  - "Accident Date" OR "Report Date" OR "Effective Date", AND

  - "Reported Loss" OR "Paid Loss"

- There is no restriction on additional fields in a Standard table, only a minimal requirement.

EBDEX TOOLS

- Tools for interacting with EBDEx tables fall into three categories

  - Creating tables that conform to EBDEx standards

  - Producing traditional reinsurance submissions based on EBDEx tables

  - Actuarial tools that reference EBDEx tables
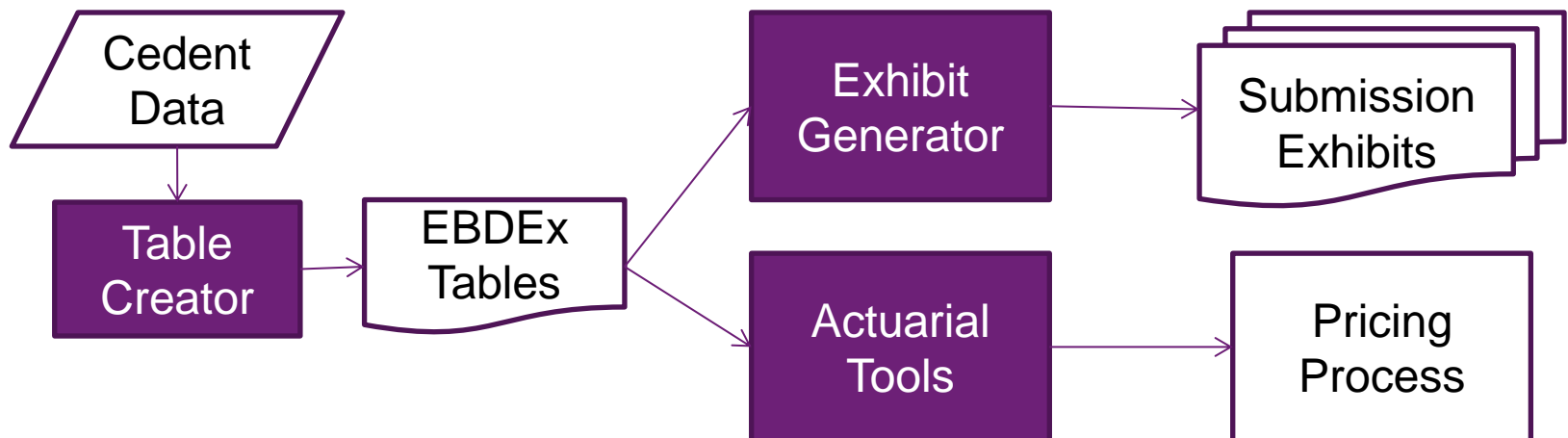
WHO CREATES EBDEX TABLES?

- Since brokers currently compile reinsurance submissions, they would also likely be creating the most EBDEx tables.

- Submissions wouldn't look much different, and brokers might realize increased efficiencies

- EBDEx standards could be used to help cedents understand what markets (actuaries) are looking for.

- Sophisticated cedents may find it more efficient to create the tables themselves.

WHO USES EBDEX TABLES?

- Brokers use a tool that copies tables of data into a spreadsheet that's formatted to print with colors, borders, etc. for their specific company.

    - Underwriters see a traditional submission

- Actuaries (at reinsurers and brokerages) will use either tools made available to the industry, or any tools they choose to development their own

    - If actuaries don't use tools designed to reference EBDEx tables, they are no worse off than they were with a traditional reinsurance submission.

ACTUARIES USING EBDEX TABLES

- Triangle data may be the most cumbersome to work with, so I created a tool that

  - Transforms a table of individual loss development (transactions or evaluations) into a loss triangle,

  - Generates link ratios along with weighted and simple averages of link ratios,

  - Calculates and arranges ultimate loss development factors in a column next to corresponding losses as of the latest evaluation.

- Very useful when addressing several tables (or versions of the same table)

NON-ACTUARIAL TOOLS

- Loss Layering tool that takes a table of individual losses and calculates loss in layer, by historic period.

- Loss comparison tool that compares individual losses to those of the previous year's submission (or the previous version of the current submission)

- Exhibits that underwriters consistently ask to see can be automatically generated when EBDEx standard tables are available.

ADDITIONAL BENEFITS OF ADOPTING EBDEX

- Brokers will be able to efficiently compile industry data with minimal need for scrubbing—a significant opportunity for statistical analysis to add value for their clients.

- Reinsurers can accumulate their own database of submission data, from multiple brokers, even on accounts they don't bind.

- Other departments (auditing, claims, etc.) can take advantage of this standardization, enabling people to do more with less.

WILL EBDEX CATCH ON?

- EBDEx is not the first attempt at standardizing reinsurance data

  - 1999: Aleksey Popelyukhin, PhD wrote "On Hierarchy of Actuarial Objects" and "Watch Your TPA: A Practical Introduction to Actuarial Data Quality Management"

  - 2006: "Reinsurance Mark-up Language (ReML)" was presented at the Seminar on Reinsurance

  - 2013: In response to a post about EBDEx, Brian Fanning (Redwoods Group) is looking to implement something like EBDEx in R

EBDEX ADVANTAGES

- Excel is accessible – Every actuary, underwriter, and broker already has Excel installed. Nothing else needs to be installed to make use of EBDEx.

- Excel already handles dozens of languages and international formatting

  - 12/31/2012 or 31/12/2012?

  - 4,000,000 or 4.000.000 or 4'000'000 or 4 000 000?

- EBDEx, to my knowledge, is the only standard with tools being actively developed

THERE WILL BE CHANGE

- Question:

  - Do you believe that the current method of transferring data in reinsurance submissions is the best that we can do and that there will never be an improvement?

  - If you answer no, then you believe that something has to change eventually.

- EBDEx is a viable path for change, and affords actuaries the opportunity to play an instrumental role in its development.

THANK YOU