Article from:

Financial Reporting

Automating and Optimizing Financial Processes

By Andrew Chan

I n 2012, JPMorgan's Chief Investment Office (CIO) suffered large trading losses. In its internal investigative task force's report, it disclosed that its Value-at-Risk (VaR) model *"operated through a series of Excel spreadsheets, which had to be completed manually, by a process of copying and pasting data from one spreadsheet to another."*[1]

Does this sound familiar? There are manual processes in most of our Excel reports. After the losses, the internal Model Review Group also identified other errors. For example, *"After subtracting the old rate from the new rate, the spreadsheet divided by their sum instead of their average, as the modeler had intended. This error likely had the effect of muting volatility by a factor of two and of lowering the VaR ..."*

This sounds remarkable and you may wonder why the Model Review Group did not discover the errors during their initial review. The report explained:

"the trader to whom the modeler reported wrote that he should "keep the pressure on our friends in Model Validation and [Quantitative Research]." There is some evidence the Model Review Group accelerated its review as a result of this pressure, and in so doing it may have been more willing to overlook the operational flaws apparent during the approval process."

Most model reviewers probably have the same experience; the modeler uses all the project time to develop the model and then forces the reviewer to get the job done in an impossible timeframe. In order to meet the deadline, the modeler often suggests that a high level review would be sufficient; the reviewer simply does not have time to review every single formula. Even if the reviewer finds something obviously wrong, the modeler would still push the model to production and promise to fix it as soon as possible (and often doesn't follow through because the modeler has other higher priorities).

We are in the 21st century! So why are we still having this problem?

AUTOMATION

Automation can significantly increase productivity and release resources for other more critical initiatives. It can also minimize human error and even improve team morale. So why are there still so many processes that are not fully automated?

It is a chicken and egg question. We are so busy because we do not have time to automate our processes and we do not have time to automate our processes because we are so busy! We all have a hard time meeting the deadlines from yesterday and we do not have free time to familiarize themselves with available technology. Some Excel users probably only know 10

Andrew Chan, ASA, is an Actuarial Systems Consultant at ALG Inc. He can be contacted at chan_a@algconsultings.com.
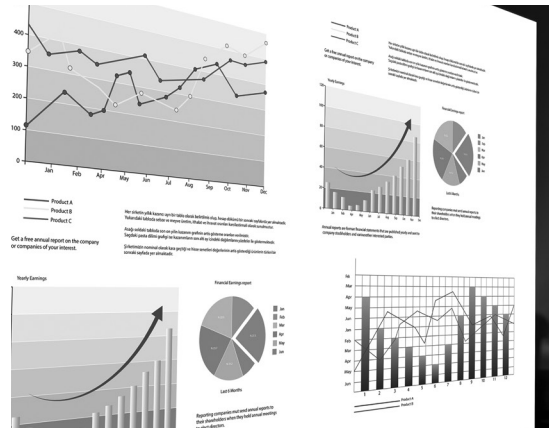
percent of Excel features; they may be still using Excel 95 features when they have been using Excel 2010 for more than two years. They use Excel for everything because they do not know that there are other tools that would fully automate their processes.

Another problem is that not all applications are designed for automation. They crash a lot and often require manual intervention to recover from error. Unfortunately, the owners prefer quick fixes rather than a long-term solution.

There may be other reasons, but the bottom line is that automating a routine report process can streamline the whole process.

Knowledge is power! If you know the right tool, then you will find automation can be quite straightforward. And if you know the right methodology, you can even reuse the same processes to handle all reports.

OPTIMIZATION

"There is nothing broken!"

Whenever it is suggested to companies to optimize their processes, this is the number one reply: "Nothing is broken." That may be true in the sense that the results are correct. However, the application may take days or even weeks to run. They may be able to meet the routine deadline, but if their senior management wants to run a few more scenarios for tomorrow's management meeting, then they have to provide guestimates. And when there is any unexpected result, they have no time margin for extra analysis.

One of the main challenges for End User Computing (EUC) applications is key man syndrome, i.e., only one person knows the application. Without any proper system documentation or review, how can someone else understand such gigantic, spaghetti structure Excel applications? As a matter of fact, sometimes even the owner has difficultly enhancing his or her own applications; adding a simple reporting line can take days or even weeks. If he or she leaves the company, the application may become a black box that no one else will be able to operate or enhance.

We can proactively optimize our applications in an organized manner or wait until the fire burns us. The JP Morgan 2012 CIO loss may be a good lesson for those who still say "Nothing is broken!"

QUALITY ASSURANCE

One of the big misconceptions about EUC Quality Assurance (QA) is that modelers are the users and they are very knowledgeable so there must be no bugs. The truth is that we are human beings and we all create bugs, so EUC applications need QA. Another misconception is that high level checking is sufficient. There can be multiple bugs that offset each other. As a matter of fact, sometimes when we fix a bug the high level results actually shift away from our expected results because we simply broke the balance. The most common QA challenge is that we do not have enough time. If the JP Morgan trader had a time machine to go back to 2012, I believe he would definitely assign enough time to allow the Model Review Group to do its job. Once we understand the importance of QA, we will allocate sufficient time.

CONCLUSION

There are costs associated with automation, optimization, and QA. The tasks can be very demanding. Unfortunately, most business units do not have their own development teams. The application owners are part-time programmers who do not have any formal training; they do not have the expertise to choose the appropriate tools and they do not have sufficient time to develop a proper process. Developing a robust, fully-automated, and highly effective financial process requires investment in training, qualified professionals and a shift in working culture, i.e., working smart rather than working hard. ∎

ENDNOTE

[1] Report of JP Morgan Chase & Co. Management Task Force Regarding 2012 CIO Losses *http://files.shareholder.com/downloads/ONE/2272984969x0x628656/4cb574a0-0bf5-4728-9582-625e4519b5ab/Task_Force_Report.pdf*