A guide to selecting a Treasury ALM system

Insight paper

Future-proof your banks Treasury ALM function

MORS software

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Introduction

MORS Software has developed this guide for banks, when selecting a new Treasury Management System (TMS) or Asset Liability Management (ALM) system. The paper also outlines our approach to delivering and implementing Treasury ALM systems.

Structural changes and cost pressures in the financial services industry are reshaping bank executives' approach to information technology. To meet the demand for software systems that can rationalize the data-heavy and mundane processes of banks' treasury, ALM and risk management offices, the fast-growing fintech sector has developed a model that complies both with banks internal requirements as well as with regulatory requirements.

These new software systems speed up data processing and help release treasury office staff from routine tasks to focus on high-quality analysis and decision making.

Selecting a new treasury or ALM system is a decision that is likely to be made only once in a decade. This is because these systems are heavily integrated with other systems in the bank and following implementation they are not the easiest to replace. When selecting new software, it's important that all elements under consideration are discussed thoroughly with colleagues, potential software providers, even peers in the industry. Think carefully about the scope of the project, what problems need solving, implementation risks, support and, not least, the costs.

Getting started: what needs solving?

Have a set of agreed criteria before canvassing potential suppliers of your new treasury ALM system. While these criteria are likely to change or be modified during the selection process, some cornerstone "must haves" will help in the process of eliminating unviable solutions.

It is important to consider the scope of the application needed: for example, the risk surfaces the system must cover, such as liquidity risk, interest rate risk and counterparty credit risk. Examine also whether the system will primarily be for treasury management or asset and liability management – even both. What supporting roles will the system have? For example, should it also address and support regulatory reporting.

A Treasury ALM system without well-functioning and reliable integration with other systems is unlikely to be useful. Carefully consider the key integrations for the new system. Clearly, the banking book integration will be crucial to get right, but other key integrations might include market data, data warehouse, payment system and general ledger.

The list of requirements can and should be very long and detailed. It is key to consider the requirements both from a point of view of solving current pain points, but also carefully considering future requirements. The future requirements should include likely or known regulatory changes, fit with the banks future IT architecture, financial markets requirements as well as business requirements.

On the following page, we have outlined a system selection decision criteria check list. The check list should be viewed through both a current pain points lens, as well as, through a future requirements lens. Even though there is no crystal ball for future requirements, it does make sense to carefully consider plausible future requirements, as a Treasury ALM system is highly likely to be deployed for multiple years ahead.



Decision criteria check list

Current pain points

Risk surfaces

- Liquidity Risk
- Interest Rate Risk
- Counterparty Credit Risk
- Credit Risk (RWAs)

Technology

- Technical & Database Platform
- Interface formats
- On-premise or Cloud or SaaS

Application(s)

- Treasury Management
- Asset & Liability Management
- Funds Transfer Pricing
- Stress-testing
- Financial Planning
- Liquidity Risk

Integrations

- Core Banking
- General Ledger
- Market Data
- Data Warehouse
- Payment System

Processes

- Alerts & Warnings on Limits
- ALCO data pack compilation
- Regulatory reports compilation

Supporting roles

- Management Information / BI
- Regulatory Reporting
- Subledger to G/L

Workflows

- Front to Back Office for Treasury deals
- Stress-testing
- Segregation of duties

Match with user type

- Point & Click for general users
- Highly configurable for advanced users
- Customisable for programmers

Future requirements:

- Regulatory
- Technological
- Markets
- Business



Weighing up the costs

It can't be sugar coated: the cost will be key among the decision-making criteria. Don't just limit cost calculations to project implementation, licensing and maintenance fees. Total cost of ownership (TCO) is calculated over a 3-5-year horizon and gives a broader account of the likely budget needed to cover such a project.

Aside from the above-mentioned project implementation, licensing and maintenance costs, consider the following in the TCO calculation:

- Hosting costs: where, how and by whom will the system be hosted? Examine the costs of on-site hosting, or at an IT data centre, or perhaps a cloud-based system. Such options come with varying price tags and these – indirect costs – are likely to be a significant part of the TCO.

- Upgrade costs: considering the pace of innovation in the banking industry, it is critical to select a system that is being actively developed and comes with regular releases. Software upgrades should be a part of the license agreement and it's recommended that a system be selected that includes the rights to new software versions under the license agreement. Question also how labour intensive are such regular upgrades.

- Costs of operating data management and other systems: the human element behind the new system is the Treasury ALM staff managing the system and especially the data in it. The bank's whole balance sheet must be uploaded and the indirect cost to fix mistakes such as erroneous data from source systems or corrupt data must be accounted for. The question to assess is how much manual intervention is needed to manage the daily data imports and what the indirect cost of this is.

- Consultancy costs: banks usually hire consultants to help select, deploy and implement such substantial projects. If a system can be delivered pre-configured with an intuitive interface, fewer consultants are likely to be needed.

- Support and maintenance costs: once the system goes live, how resource intensive is it likely to be in terms of supporting not only the technology infrastructure but also users of the software. Does the license agreement cover these costs?

While the TCO calculations will likely be over a 3-5-year period, banks should keep track of total costs over a longer timespan as it is highly unlikely the new system will replaced within 10 years because such treasury ALM software becomes strongly integrated with the bank's other systems. Consider how simplification of treasury processes will save money in terms of time and efficiency and labour costs, in comparison with the expected lifespan of the system and its TCO over this period.



As an example of TCO calculations with a 5 year horizon, the two tables on the next page make a cost comparison for two different systems. The first table represents an old school pricing scheme where the software license is purchased as a once off, with an accompanying annual software maintenance cost. As version upgrades are not included in the license, there is a cost of upgrading twice in the five-year period. This system will require a lot of manual data management, hence annual data management costs are significant. As the system is fairly tricky to use and requires a lot of customisation, 3rd party consultancy costs are also significant.

The second table exemplifies a more modern approach where the software is offered through an annual subscription license. The subscription license only starts once the implementation project has been delivered, hence the first years' license is at 50%. Maintenance and version upgrades of the software are included in the subscription license. This software is based on modern and off the shelf technology which means the hosting cost are lower. As the software is intuitive to use the need for 3rd party consultants is lower. Finally, the data management is largely automated, hence data management costs are significantly lower.

From the below simplified examples we can quickly see that the 5 year TCOs are vastly different, 3,8 versus 2,0 million EUR. We can also see that the direct costs, i.e. the license and implementation costs are not the cause for the big overall difference. It is rather several indirect costs, such as hosting, data management and 3rd party consultancy costs that cause the biggest differences. This highlights the importance of including indirect costs when calculating the Total Cost of Ownership over several years.



Cost Calculation examples

Old School Cost Calculation — **Costs in ’000 of EUR**

Year	1	2	3	4	5
Implementation project	250				
License purchase as once off	600				
Software Maintenance	108	108	108	108	108
Hosting Costs	120	120	120	120	120
Version upgrades			300		300
Data management	125	125	125	125	125
3rd party consultancy	150	100	150	100	150
Total / Year	1,353	453	803	453	803
Total Cost of Ownership 5Y	**3,865**				

Modern Cost Calculation — **Costs in ’000 of EUR**

Year	1	2	3	4	5
Implementation project	180				
Subscription License	90	180	180	180	180
Software Maintenance	included	included	included	included	included
Hosting Costs	90	90	90	90	90
Additional SLA (optional)		30	30	30	30
Version upgrades	included	included	included	included	included
Data management	30	30	30	30	30
3rd party consultancy	100	50	50	50	50
Total	490	380	380	380	380
Total Cost of Ownership 5Y	**2,010**				



Easing implementation pains

Installing a new treasury or ALM system can be tiresome, time-consuming and disruptive. Given the amount of detail and work to integrate the new system, it can often be tough to keep the office running during its installation.

Don’t attempt to do it all at once. By choosing a system and a vendor that allows a gradual, modular or phased implementation, daily business is able to continue uninterrupted and the process will be less of a burden on office staff. Meanwhile, the fewer customizations needed to integrate the new system with existing networks, the less time and cost it will take to implement. Bear the 80/20 rule in mind: select a system where 80% of functionality comes straight off the shelf and only 20% or less needs to be customized.

To further ease the pain of implementation, choose a system that is user friendly. This may sound like obvious advice, but without an intuitive user interface the transition period to full implementation will be fraught with disruptive and costly training and human error.

Bear the 80/20 rule in mind: select a system where 80% of functionality comes straight off the shelf and only 20% or less needs to be customized.



Speed and performance

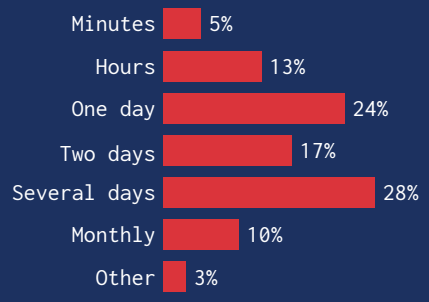
Traditionally, many Treasury and ALM systems have been clunky and quite slow to operate. A long-running joke in the banking industry describes pressing the request button for a report in an ALM system, leaving for a week's holiday and returning to see that the system is still working on generating the report. Such long response times are doubly frustrating if it's discovered that some of the source data was wrong and the whole process has to be started over. Talented treasury staff can be freed from this mundanity and access many specific data points within minutes – depending upon the speed and performance of the software selected.

Indeed, the days of batch reporting are over as even data-heavy operations such as net interest income calculations can be seen on screen within minutes, rather than having to wait overnight for printed batch reports.

So, consider carefully whether the new system caters adequately for the amount of data it will process on a daily basis.

It's crucial to select a system that can efficiently integrate with the company's banking book by automating data management and only having to import the daily changes in the balance sheet as opposed to loading the full balance sheet every time. A recent study on Interest Rate Risk management revealed that it takes two days of more for the vast majority of banks to complete an ad hoc Interest Rate Risk in the Banking Book (IRRBB).

What is your lead time to complete an ad hoc IRRBB calculation, including data gathering, data validation and calculation times?



Techniques using transient cashflows and multithreading capabilities ensure better performance and shorter response times for reports, including large data sets.

Multithreading makes use of parallel processing capabilities, where several core processors split up the required work to speed up calculation times for generating reports.

Using transient or temporary cashflows also speeds up report generation and shortens response times as the time-consuming operation of writing to the hard disk is avoided and, instead, large sets of cashflows are kept in the server memory. This is especially relevant when generating reports based on tens and hundreds of millions of cashflows.



Importing the banking book

A Treasury ALM system is highly dependent on an efficient and accurate integration with the bank's core banking solution or solutions. As such, the banking book can be imported directly from the core banking system or from a data warehouse which is fed by the core banking system.

For the integration to be successful, a number of cornerstone parameters must be fulfilled. Crucially, data should be imported at agreement level - this means importing unaggregated data. Aggregated data is very hard to drill down into and, therefore, not very transparent. It is also difficult to change the aggregation parameters once the data has been initially aggregated.

Another key aspect is to utilise a system that only imports changes to agreements that have been previously imported rather than importing the whole banking book every day, as it is a very small percentage of banking book agreements that change every day. Therefore, much less data needs handling on a daily basis if only the “daily delta” in the banking book is imported. This means much shorter processing times and time savings.

A third key methodology is to import agreement terms and conditions into the Treasury ALM system rather than cashflows, and allow the Treasury ALM system to generate the cashflows. This is important because then the transparency and accuracy of the individual agreements in the Treasury ALM system will be visible to the user. It is also faster to import terms and conditions than cashflows.

There are a number of other best practices for importing the banking book that have been summarised on the next page.

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10 best practices for importing the banking book

1. Import single deal/agreement level data. Avoid aggregating data before importing
2. Import terms and conditions of deals, rather than cashflows of deals generated in another system
3. Consider multiple risk surfaces when designing the import interface: liquidity risk, interest rate risk and credit risk requirements
4. Import the daily balance sheet ‘‘delta’’ only, rather than all deals & agreements every time
5. Develop your interface iteratively, as all requirements are unlikely to be catered for based on one initial specification
6. Import as many data attributes and reporting filters as possible: product type and code, legal entity, business unit, chart of account
7. Implement automatic data reconciliation, quality checks and error reporting as part of the interface
8. Import the banking book at least once every working day
9. Watch out for ‘‘accidental data transformation’’ when attributes of agreements disappear or change between source system and the Treasury ALM system
10. Reliability and consistency to be top priority when developing the importing interface

Reducing project and financial risk

Implementation projects can be lengthy and costly – things can go wrong – but there are techniques that can be applied to the process to help mitigate these risks.

One way to mitigate implementation risk is to a complete a proof of concept (PoC) with the strongest looking supplier during the selection process. The PoC can help the bank get a feel for both how the system and the supplier works. A PoC should be carefully scoped and focused, otherwise this process will become frustrating both for the bank and the supplier if the focus keeps shifting.

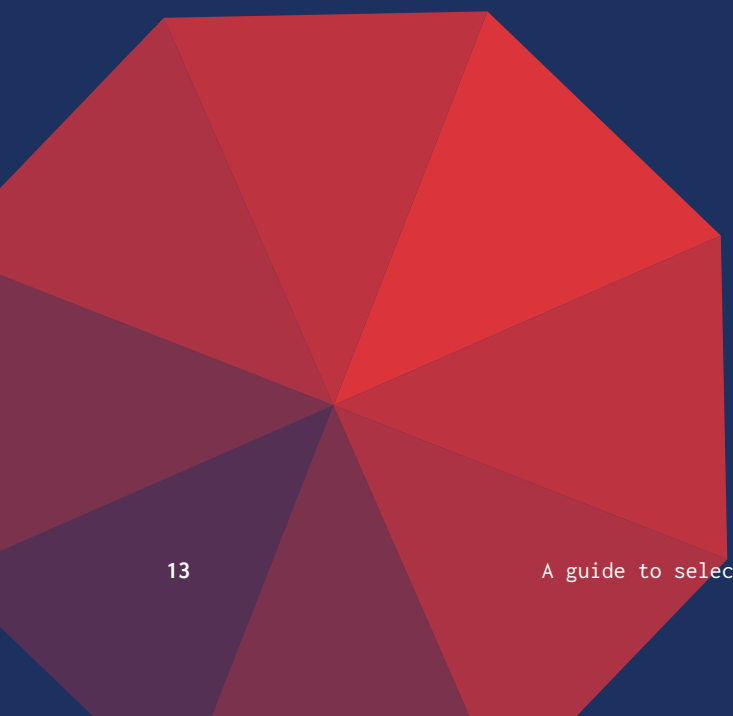
It's been mentioned above, but it's worth repeating here: there's no obligation to do everything at once. Systems and vendors that allow for a phased approach to full implementation cause less overall disruption to daily office functioning as fewer staff need to be heavily involved in system implementation at once, or have to deal with the difficulties in operating a new system for the first time.

Ease of use, therefore, is an important consideration. Training is costly and time consuming, so the better equipped users are from the outset with an intuitive, simple-to-learn system, the quicker they can make use of its benefits.

Meanwhile, to help mitigate cost risk, consider systems that are highly configurable but require less customization or bespoke software development. This might sound like semantics but a system that is highly configurable without the need to do further programming is by most accounts much cheaper and faster to implement.

It is also preferable to select a system that comes pre-configured, i.e. it comes with default configurations rather than as an "empty box". Changing default configurations to match the banks requirements has proven much quicker than doing all or most configuration work from scratch.

Finally, avoid costly fees for regular upgrades by ensuring these come as part of the license package.





Looking ahead: are you future proof?

Some things we can never know, but nothing ever stands still. This includes the needs of banking software users. Treasury and balance sheet managers and chief technology officers will want to be sure their partnership in a new treasury or ALM system continues to actively develop the product after implementation.

If something's not quite right, or certain circumstances or working practises change, those same executives will want to feel confident that their software partner can work with them to develop the system, influenced by their changing needs.

And if a client selects a system that is hosted on site at the bank entrusted in the hands of its own IT staff, but later decides to transfer software to a cloud-based infrastructure, or seeks a software-as-a-service model, further changes will need to be accommodated.

Among the changes that are most difficult to deal with come from the regulators of the financial services industry. Ensure your suite of treasury, asset and liability, and risk management tools come pre-configured with the ability to adapt to such changes in circumstance. A pre-configured system shortens implementation times and the configurability caters for future changing needs.



Achieving digital treasury

Financial technology has traditionally been adopted first by the sales and trading desks of financial institutions. Treasury and ALM offices – often seen as slower moving in regard to IT developments – now have a much bigger role in the banking industry and should not be left lagging.

There needs to be a cultural shift. Software vendors need to do more to convince treasury and ALM managers that they can supply a product that will free up their staff to do the more important and interesting work of data analysis, rather than data input and data management.

Software suppliers also need to convince managers that their products can be fully integrated into existing IT infrastructure and that the disruption it causes in the short term is fully worth the effort in the longer term. To this end, it is important to choose a software provider that works closely with the client – a partner rather than a vendor – fitting closely within the cultural structure of the company.

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Choosing MORS Software

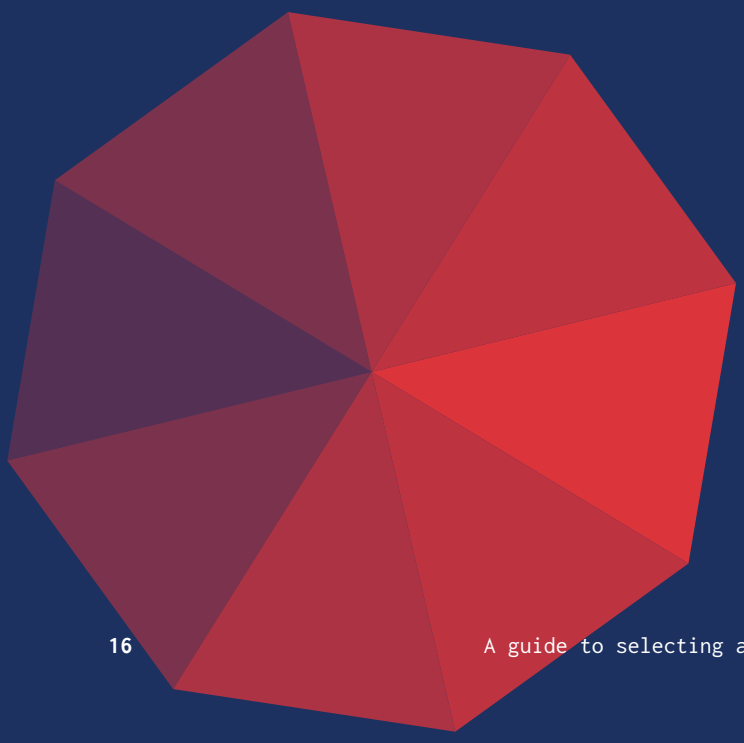
What makes MORS Software stand out as a fintech partner is its ability to provide integrated and holistic treasury management, asset and liability management and liquidity risk management solutions in one modular system. Our solution is faster, more efficient and cost-efficient as well as easier to use than those of most of our competitors who can provide such coverage only by stitching together disparate software systems. This is particularly relevant for small to medium-sized banks.

By importing and managing the whole balance sheet at an individual agreement level, we are ahead of our competitors who usually aggregate information before loading it into their systems. This enables your treasury and ALM teams to drill deep into the details to provide fast and accurate analysis and reports, all of which can be viewed and reconfigured on screen, making for a convenient and user-friendly package.

Our research suggests that a large proportion of banks are yet to bring modern data management software systems to their treasury and ALM and risk management departments, given survey results that show lengthy lead times to complete calculations including banking book data. We strongly believe MORS Software can provide a cost-efficient answer thanks to the package's ease of implementation, use and maintenance.

Thus, to the bottom line. Key license agreement details can be dealmakers or deal breakers. MORS Software license agreements include the rights to new versions without additional charges. The license agreements also cover regulatory changes, meaning that MORS Software will provide updates to the software as part of the service, should new regulation require that.

So, eliminate the drudgery of data management and slow systems that are hard to use. Free up talented treasury staff to do the important work of analysing calculation results and making well informed and timely decisions.





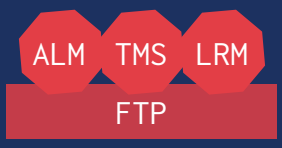
About MORS Software

Depending on your priorities, MORS solution and its modules are packaged to meet the following needs.



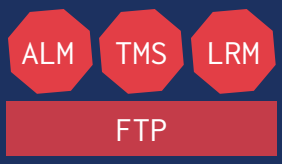
Integrated ALM

With MORS Integrated ALM (*Asset & Liability Management*) approach banks can monitor, manage and report interest rate risk and liquidity risk in one system.



Holistic Treasury ALM

MORS Holistic approach offers ALM & Treasury Management in one system.



Point Solutions

Banks fulfil specific interest rate risk, liquidity risk and treasury management requirements by using one of MORS modules.



ALM as a Reporting Service

MORS ALM as a Reporting Service supports banks with an outsourced ALM function.

Why MORS?

Improves Efficiency

MORS improves Treasury ALM processes, enabling focus on risk analysis and decision making. MORS shortens lead times for report and scenario generation, providing intuitive and configurable set-ups. MORS delivers additional efficiencies covering multiple risk surfaces, such as interest rate risk, liquidity risk and counterparty risk, in one integrated system.

Saves Costs

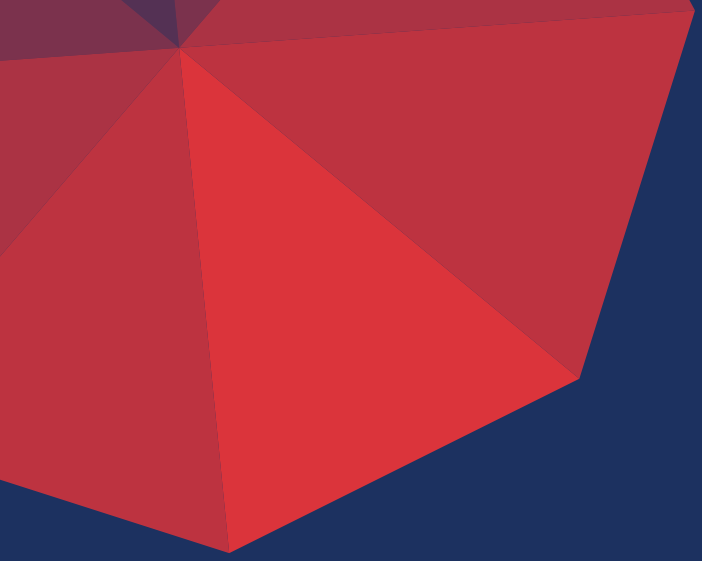
MORS implementation projects are standardised, decreasing overall costs of system implementation. Once implemented, MORS gathers, reconciles and updates source data automatically, lowering system operating costs. MORS annual software license costs are fixed and include new software releases twice a year. These offer predictability and cost savings in Treasury ALM.

Optimises Balance Sheet

MORS helps Treasury ALM practitioners maximise NII within regulatory and internal constraints. MORS calculates key ratios (such as LCR, NSFR, EaR, EVE, IRRBB) on a continuous basis, providing excellent decision-making support. In addition, MORS is a tool for internal assessment processes and ad-hoc stress test requirements, further increasing the benefits of the system.

Helping Banks optimise their Balance Sheet & Financial Risks





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