Treasury management systems overview

Contents

Introduction

The strategic importance of the treasury organization has increased steadily over the past few years and has impacted their structure and scope. Treasury organizations have become more important reflecting the increasing complexity of business strategies and are expected to continue to respond to the increasing pace of change. Finding the right response to the right questions on the treasurer's and CFO's agenda can make the difference between a thriving company with a solid credit rating and an organization struggling with liquidity and credit downgrades. Therefore, having a scalable and clearly defined target treasury organization, as well as a forward-looking governance structure, is crucial.

Companies have also come under increased pressure from shareholders and regulators to increase transparency and improve financial performance. These expectations are leading to a significant change to the treasury function as activities are increasingly being centralized. Many organizations have just begun designing future target operating models for their treasury organization.

Technology is always changing, but as much as things change, the central technology within treasury is the calculation and processing power of the treasury management system (TMS). TMS software has been at the forefront of driving the automation of treasury functions, straight-through processing and integration with other systems to the harmonization of enterprise technology. In order to reduce the need for customization, the choice of TMS should focus on the most appropriate option to fit the specific business requirements of an organization, now and into the future.

This overview includes a section containing responses provided by several TMS vendors to questions about their company profile and their product's functional capabilities and technical aspects. Its purpose is to provide an overview of vendor capabilities, integration and deployment.

The vendor information contained in this brochure is sourced directly from respondents who agreed to participate in the questionnaire prepared by the EY Global Treasury Services teams. The lead-in section of this brochure also includes our observations on the current TMS landscape and trends, as well as our suggested approach when conducting a TMS selection and implementation project.

The objective of this guide is to provide a clearer picture of the TMS landscape and the relevant thought processes that your organization may be faced with when selecting and implementing a new TMS.

Evolution in treasury and impact on the TMS landscape

Trends in treasury technology

Current technology trends are:

‣ On the periphery of treasury, new and disruptive technologies introduced by financial services technology companies (FinTechs) are changing the way customers and businesses interact. Robotic process automation (RPA) is starting to change low value and repetitive work through enhanced automation, and artificial intelligence (AI) opens the possibility of machines performing cognitive tasks on the basis of historical data and learning.

‣ More treasury systems are being implemented in the cloud, either as a pure Software as a Service (SaaS) application or as a private cloud on dedicated client databases. This trend has been driven by cost and security with the prevailing view being that outsourcing IT infrastructure and security to dedicated vendors is cheaper and more efficient than installing systems in-house.

‣ While still emerging, blockchain has the potential to eliminate float from trusted financial transactions, eradicate settlement processing time and errors in booking, and support real-time global integration between finance and business operations systems.
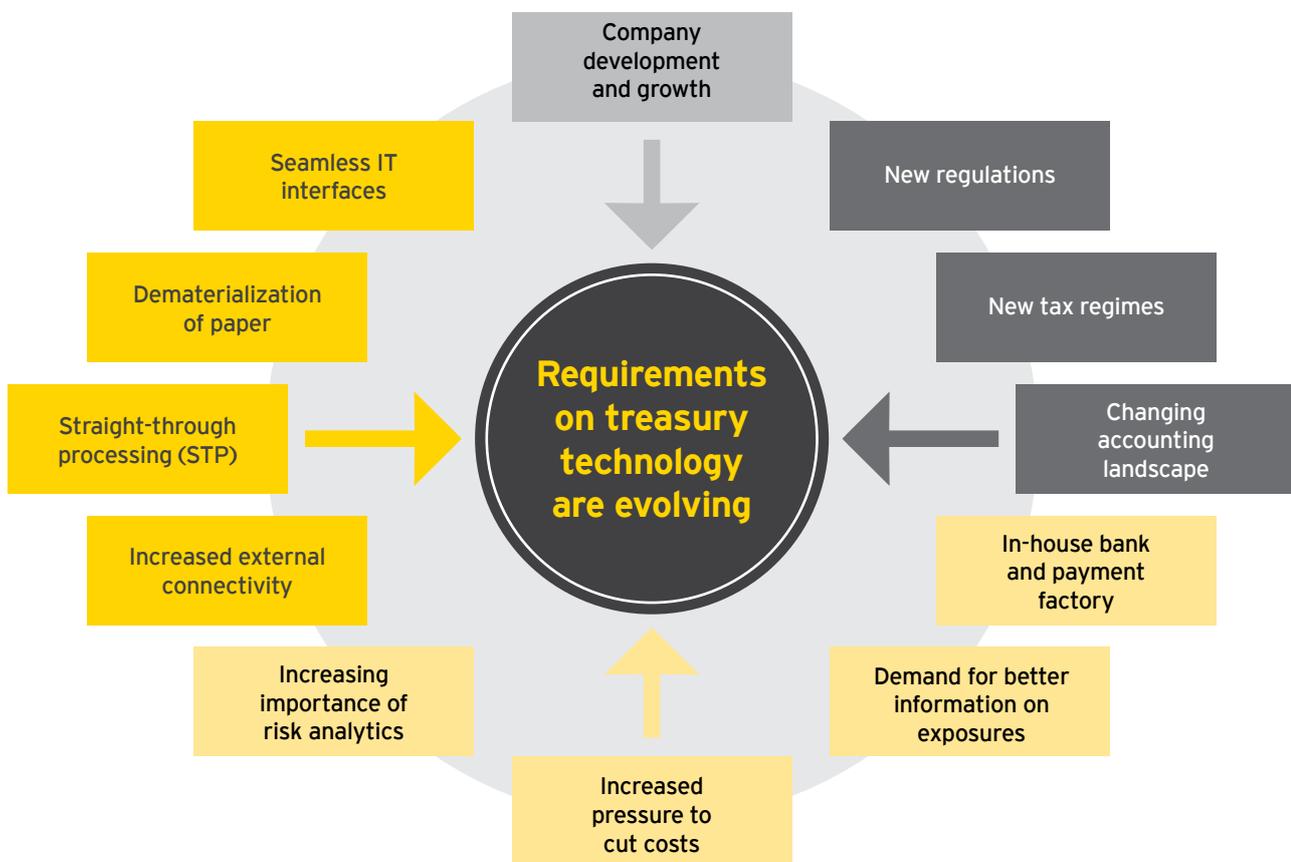
These trends raise additional questions which directly concern treasury:

‣ How is my data protected in the cloud?

‣ How are FinTech business payment systems set up?

‣ How is liquidity provided for cryptocurrencies?

‣ How will traditional bank transaction pricing be affected as traditional financial institutions compete with FinTechs, and which low-value treasury processes could be offloaded to bots?

Despite the changes in technology trends the core treasury technology remains the TMS. A TMS uses referential data, pricing feeds, bank statements and information entered by users to capture transactions, generate settlements, calculate forecasts, valuations and accounting events. No matter where the TMS is located and how it interacts with banks, data information services, accounting and trading systems, third-party business intelligence (BI) tools, FinTechs and robotics, the TMS itself is where the visibility into liquidity positions, settlements, forecasts, exposures and risk management happens. It is arguable and will likely continue to be, the most critical technology component within treasury for the foreseeable future.

What influences treasury technology?

- Treasury organization and development
- Regulation, tax and accounting changes
- Treasury operations and demand for efficiency and centralization
- Keeping pace with technological developments and requirements, including prevention from cyber attacks and supporting business continuity

Company development and growth

New regulations

New tax regimes

Changing accounting landscape

Seamless IT interfaces

Dematerialization of paper

Straight-through processing (STP)

Increased external connectivity

Requirements on treasury technology are evolving

In-house bank and payment factory

Demand for better information on exposures

Increasing importance of risk analytics

Increased pressure to cut costs

The technology landscape of a treasury function is driven by an enterprise IT strategy, which considers external and internal influences in defining the broad IT capabilities needed to support business activities. IT services, applications and infrastructure are deployed to support enterprise objectives within the framework of the IT strategy.
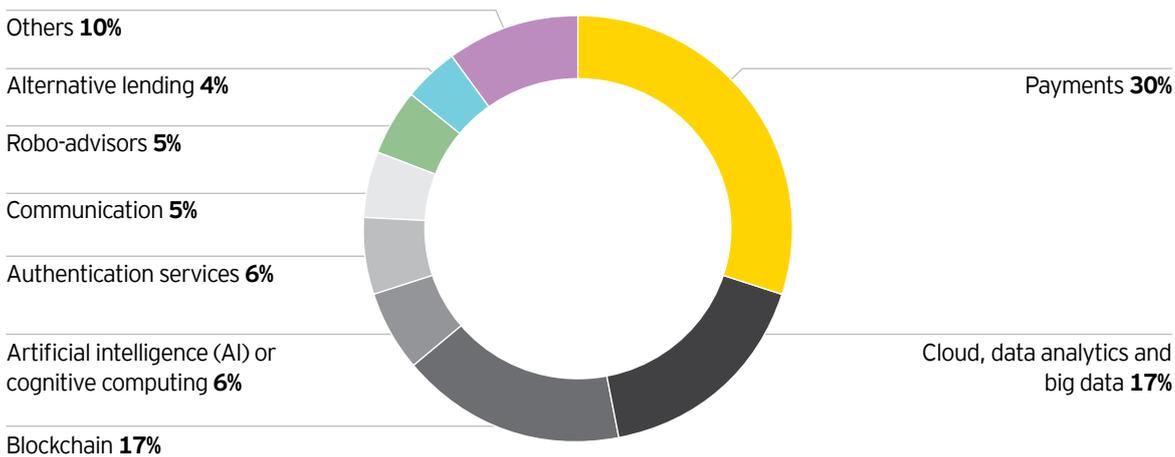
The core objectives of a treasury organization include preserving liquidity and protecting financial assets. These activities require a flexible technology infrastructure with secure connectivity to banking counterparties, integrated data and reporting and automation for inherently manual operational processes. Proper definition of business requirements and understanding of external influences that impact the treasury function (including banking industry regulation) are critical to support continuous treasury-IT alignment.

FinTech – a driver of disruption

The newer functionalities that FinTechs offer can have an impact on the design of a treasury group as they present opportunities for corporates to transact and receive financial services independently from banks or other established organizations and intermediaries. This trend has led TMS vendors to rethink their offering from both a functional and technological perspective. Examples of FinTech developments that could have a major impact on treasury functions include the following:

‣ Peer-to-peer platforms

‣ Crowdfunding

‣ Trading of financial instruments

‣ Payment and receipt options

‣ Cryptocurrencies as a medium of exchange

FinTech activity in banks: areas of focus

Others **10%**

Alternative lending **4%**

Robo-advisors **5%**

Communication **5%**

Authentication services **6%**

Artificial intelligence (AI) or cognitive computing **6%**

Blockchain **17%**

Payments **30%**

Cloud, data analytics and big data **17%**

▸ **Payments:** focus has been on contactless payments, adding features to mobile applications, peer-to-peer transfers and foreign exchange (FX) tools.

▸ **Big data:** banks have been investing in analytics to improve efficiency and provide additional value to customers.

▸ **Blockchain:** various collaborations have been launched to explore the use of distributed ledger technology in areas like payments, trade finance, storage, digital identity, voting and trading.

Enhancement of treasury reporting

Reporting has always been an issue for TMS customers. TMS databases have complex table structures and vendors typically supply basic reporting tools through proprietary report writers. Reports either formally verify events or they are dynamic. Reporting requirements change all the time, which is why self-service, on-demand reporting is the preferred reporting methodology. The

technical challenge is the inherent complexity of TMS databases, which makes it hard for business users to write their own reports. As previously mentioned, a TMS is normally built on a relational database which requires predetermined views to prevent direct access to data tables preserving efficiency and security of the underlying data. It is still common for TMS reports to be exported into spreadsheets for manipulation and formatting prior to distribution. Along with treasury becoming more of a value-add to the business, it also becomes a central hub for key financial data, which means easy access to data is a must-have for every option. Besides standard cash and limit type reports, additional reports are created on the basis of the unique setup of the corporation and key performance indicators (KPIs), such as counterparty credit exposure or liquidity constraints. These types of reports are often used on a daily basis and created in spreadsheets. If needed for senior management, data is often subsequently transferred to a presentation format. Besides standard TMS reports and manual recurring reports, the ability to create an ad-hoc report may also be needed.

There is a shift in this methodology as digital development evolves to support data warehouse capabilities and near real-time dashboard capabilities.

In most companies, an additional reporting environment (data lake or mart) is established and used for customized reporting, next to a TMS and spreadsheet. A newer approach to reporting is to use relatively small interactive data visualization techniques with a business intelligence (BI) focus. They are directly linked to the TMS databases along with a corporation's data lake. When reporting requirements change and adaptation is needed, there is still a considerable amount of effort needed from the business as well as IT to deploy technical services and additional applications that support the changes.

Analyzing data and discovering patterns is becoming more and more a focus for the treasury department. Systems using predictive analytic algorithms and big data are increasingly available for exercises, such as liquidity forecasting based on sales data and historical trends. These kind of analytics can only be applied if standardized and structured data is available and accessible through interfaces provided by the TMS and other data sources.

Customization

Customization and configuration are often used interchangeably, but there is a difference with significant consequences:

▸ Customization is a modification of the software that requires change in the code structure, such as database table change or API development, which typically requires some form of implementation.

▸ Configuration is where available switches within the system are used to change behavior or processing features.

The implementation of a new TMS is often a tradeoff between the benefits of additional functionality and the associated extra costs. Increased functionality, flexibility with products and interfaces with other systems goes along with higher complexity of the software product and a higher cost of internal knowledge and maintenance. Higher-end options covering the full spectrum of treasury requirements and instruments, along with complex interfaces and reporting require a great deal of effort from the start of implementations to "go live."

When implementing a new TMS, companies tend to design the "new" processes based on their current setup as users typically seek to apply the existing processes and reports of their legacy system to the new installation. This often leads to the situation that TMS vendors "bend" the new system into the old processes and reports. But acquiring a new TMS is actually an opportunity to review the treasury value chain, processes and reporting. Some selective questions one might ask:

‣ What is the desired maturity level for target state process design?

‣ Is the target operating model aligned with the overall strategy of the company?

‣ What are the standard and predetermined processes of the new TMS? Do they fit my organization?

‣ What is the purpose of the existing reports? Can they be improved?

‣ Who is the recipient of the information provided at the moment and why?

The exception proves the rule: often some specific requirements and needs of a company cannot be fulfilled within the standard implementation and require customization. The way this is handled varies from TMS vendor to TMS vendor. Some offer the flexibility to configure the corresponding functions within the application, some require additional add-ons and workarounds or additional system developments.

Additional requirements may significantly affect the total costs of implementation and should be considered in the beginning. Every additional development in the initial setup will slow down or even prevent an easy and quick upgrade to newer versions of your TMS.

It is crucial to have a good understanding of how your current processes relate to standard processes of your new TMS in order to have concrete insights into adjustments that are needed in either the TMS or in the processes. In addition, it will be important to have insights into market-leading practices. The implementation of a TMS is a serious undertaking, but also a unique opportunity to get rid of tailored and hard-to-update add-ons and process inefficiencies.

TMS landscape

Treasury applications tend to fall into two categories, TMS-focused vendors (specialists) and Enterprise Resource Planning (ERP)-focused vendors (generalists). Whereas the ownership structures across TMS vendors varies (public, private equity and privately owned), the ERP vendors tend to be publicly listed companies.

The usual profiles of TMS vendors are:

▶ **Public:** tend to have a strong public profile, an investment strategy and discernable earnings

▶ **Private equity:** tend to be more conservative with the information they disclose and focus on cost savings and ultimate goal for sale

▶ **Private:** similar to private equity above

The TMS vendor market has consolidated considerably over the past decade, with private equity firms acquiring TMS vendors, and larger vendors acquiring complementary and smaller companies. TMS players are becoming increasingly global, with broad product offerings and strong support networks. Smaller players face significant challenges in keeping up with competition from larger, financially strong vendors and focus increasingly on niche differentiators. However, they are also unencumbered with a lot of the historical inefficiencies that tend to plague software. The dominance of global vendors is further exacerbated by the constantly changing regulatory environment (e.g., European Market Infrastructure Regulations (EMIR), Single European Payment Area (SEPA), International Financial Reporting Standards (IFRS) 9 and 13), which requires significant investment from vendors with more limited financial strength and international exposure. As indicated earlier in this publication, internal and external environments outside corporate treasury and overall advancement in technology have forced vendors to expand their functional offerings to stay relevant. In some cases, these developments occur either organically, through outsourcing or through acquisition and integration of point solutions. Regardless of how the developments occur, the shifting landscape presents challenges for vendors trying to keep up with the market.

The TMS market can be segmented into offerings aimed at entry level, mid-market and high-end requirements:

1. Entry level (regional) systems
2. Mid-market corporate systems (full suite)
3. High-end systems

1. Entry level (regional) systems

These products are typically geared towards organizations with domestic operations, low volumes and simple treasury requirements. They are often developed in the region they are supporting and have a narrower focus than systems in higher tiers. From a functional standpoint, these provide basic bank reporting, consolidation of bank connectivity, cash management, regional payment types and bank account management. They may be coupled with best-in-breed target options for more sophisticated deal types and comprehensive risk management. These may also be partnered with ERP systems to provide a more visually appealing offer for cash reporting.

2. Mid-market corporate systems (full suite)

These products target more complex requirements than those in the entry level or regional tier. Systems in this tier are scalable and vary from very customizable to "out-of-the-box." The full suite of treasury functionality allows for these products to be spread across all treasury areas. Functional capabilities include cash management, risk, capital markets, hedge accounting, multiple GAAP accounting, etc. This type of system works well for companies looking to build full end-to-end automation within a single database or front-end application.

3. High-end systems

These systems are geared towards large Fortune 100 corporates and financial institutions with very complex treasury operations. They offer similar functionality and scalability to mid-market systems but allow for more customization, are more risk-focused, can handle commodities and are built to handle higher transaction volumes. ERP systems can fall in to this category and typically provide broad functionality for managing debt, investments and risk management. Because they are much more customizable, these systems are usually not deployed in as SaaS option. They are ideal for corporates who are looking for a complex offer that integrates well with ERP initiatives or are looking for best-in-breed systems.

Vendor consolidation, new players in the market, client simplification and standardization have caused an overall expansion of the mid-market reach of clients using these systems where they would have traditionally been covered by entry level or high-end options, respectively. Traditionally, mid-market systems have offered similar functionality to high-end options with constraints around volume and complexity. However, the evolution of SaaS-based products to offer higher computing power have provided cost effectiveness and a compelling business case for companies to look internally and simplify business requirements to take advantage of mid-market systems. In addition, the attractive price point and scalability has also allowed companies with aggressive growth projections to implement a system sufficient for current requirements, with the flexibility to expand either functional use or regional footprint. This allows for deployment of a system that is sustainable for current and future needs and building a meaningful partnership for an increasingly strategic function within the organization.

SaaS

There is a clear market trend for TMS vendors to provide their products in the cloud. This trend allows treasury to become more independent from the IT function that is needed to support traditionally hosted systems. Some of the newer vendors in the TMS market focus solely on SaaS-based offers. Mature vendors with single-tenant systems have also increasingly started to offer their products in a private or public cloud environment with dedicated or shared infrastructure. This helps to diminish reliance on IT, while still using technology not designed to operate in a multi-tenant environment. In this case, organizations reap the benefits of having a system that they are able to customize and control more effectively, but will still need to upgrade periodically to remain current.

TMS selection and implementation approach

Prior to starting a TMS selection and implementation project, a clear strategy of treasury's role and the target operating model within the business should be defined. To be successful, companies should include carefully weighted business requirements in order to determine critical requirements of the system deployment. Furthermore, implementing a TMS isn't only about the processes and reporting related to pure treasury topics within the department. The treasury department interacts with internal and external stakeholders and, therefore, the TMS should support these relationships as interface touchpoints within the organization.

Certain TMS include standard interfaces, or the provider offers implementation packages, but the fit and timing should be considered when making the decision to implement a TMS. Interfaces, reports and additional functionalities are prioritized, and not all will be available when going live. When opting for preliminary manual interfaces from the beginning, proper funding (of time and especially resources) for the next steps with fixed milestones is a must. Otherwise, a treasury landscape will be created with a mixture of automatic, semi-automatic and pure manual interfaces, leading to unnecessarily high complexity.

Advancing the TMS investment

As companies strive to have the best possible return on their investments, the cost of a future TMS will also play a role in the decision-making process. It proves difficult for companies to quantify the value that new functionalities will have on treasury efficiency and control. As a result of our market insights, we are able to help you as you define future state scenarios. We can help you quantify the value a TMS implementation adds for you by assessing key benefits and cost drivers in order to help you find a suitable solution within your budget.

Typical phases of a system selection process

Selecting and implementing a "fit for purpose" TMS is a significant undertaking. In our experience, there are no two selection or implementation projects that are entirely similar. Although your specifics will always drive the selection process, we can provide an illustrative approach.

Planning and scoping

Every successful TMS selection and implementation starts with proper planning and scoping, whereby key stakeholders and project managers are identified and issue resolution protocols are defined. Justifying the business case of a TMS selection should be supported by the strategic growth of treasury operations related to the investment, meeting risk management and operational excellence standards, and achieving the required regulatory compliance through a scalable and extendable option.

Define business requirements and architecture

After defining the project plan and the scope of the implementation, it is important to identify and prioritize business requirements and the business architecture related to these requirements. After having done this with each process owner, a short list with potential vendors and systems can be created. The added value of these steps is that it is possible to pre-define a certain weighting for critical business requirements that can help you with selecting a system that meets your more critical needs. By shortlisting the number of vendors, the selection timeline is shortened, which gives you extra time for the actual implementation.

Next to your initial requirements, you should also consult with IT for strategic direction on areas such as:

‣ Integrated TMS vendors – greatest functionality for the future, but at high cost of ownership and time, or risk, of implementation

‣ Specialist vendors – dedicated functionality, but may limit long-term scope

‣ TMS SaaS or cloud offering, providing a quicker initial rollout option

‣ Data storage (specifically when it comes to SaaS options, the question is where the data is stored)

‣ Cybersecurity

RFP development and execution

On the basis of prioritized treasury business requirements, we can support the development of a request for proposal (RFP) questionnaire, whereby a scoring methodology is used to give weightings to specific business requirements. After issuing a detailed RFP and receiving the input back, the outcomes can be scored on the basis of developed scoring methodology, reflecting the capabilities of the shortlisted vendors in supporting the future state needs. It is important to note that the majority of answers to an RFP will be "yes." There are many ways to achieve a stated objective in most systems, albeit some may be "out of the box" standard functionality or specific workarounds. It is very useful to understand the vendor's offer in these two categories.

Vendor demonstrations

After you have established an understanding of the capabilities of the different vendors, it will be important to get a demonstration that gives you insight into the look and feel of the system. We recommend to develop a detailed script and scoring methodology for these demonstrations, which can help you keep the demonstrations on track and enable you to evaluate the vendors and the product as objectively as possible. A well-defined evaluation and scoring methodology adds discipline to the selection process.

Vendor selection

On the basis of the information received and the weightings of the critical requirements of the RFP and the demonstrations and workshops, we can support the development of a ranking with vendors that match your requirements best. On the basis of this ranking and your organization's preferences, your project team can make a final decision. Documenting the selection process and the decision-making can be very important as it can provide the necessary input should the final decision-making be re-evaluated at a later date.

How EY can help you with your implementation

We have experience working with clients to replace their current TMS. This experience has shown us that there usually is a significant amount of disenchantment with the client's present system or the realization that the system has served its useful life. The reasons for the disappointment vary, from realization that the system was not a good fit, or that it was a poor implementation of a good system, or that the system is incompatible or unstable in your environment. However, the underlying theme appears to be a lack of clear expectations. To avoid this, we can help you take a more pragmatic approach to system selection to support a good system fit. In our experience, successful projects manage expectations by thoroughly assessing business requirements, focusing on project management during selection and implementation, and considering the capabilities and capacity of the chosen vendor.

A key element of the implementation phase is a thorough and detailed understanding of your business processes and the definition of business requirements. However, technological and data opportunities and restraints should never be ignored in the search for the most appropriate system. It's important to have technical knowledge assigned that is both conceptual and practical so that appropriate technological options are considered.

The scope of a TMS implementation project greatly influences the timeline, resources and costs associated with executing such projects. As previously mentioned, there are no "generic" TMS implementations and as a result, there are no generic timelines or estimates for resources. TMS implementations can be divided into different stages:

▶ **Project planning:** this phase starts with conducting a kick-off meeting; confirming the project scope, protocols and roles; and developing a project plan.

▶ **Design:** the design phase starts with developing a master list of business processes that will be referred to throughout the project. In addition, a list of business requirements is distributed for in-scope areas. Most important, however, are the workshops that are conducted to define the future state treasury processes and determine the desired maturity level for target state process design.

▶ **Configuration:** in the configuration phase, sub data sets are used to validate the prototype (proof of concept) before building out the full data set. The prototype work is typically performed in a development or test database. Development of detailed TMS configuration documents for each treasury process are critical during this phase. Furthermore, identification of functional gaps based on detailed design and system configuration with mitigation should be documented. These two documents serve as the basis for developing a technology road map post "go live" in order to protect the technology investment. Additionally, should the company experience turnover, these documents also provide key insights into decisions made during the implementation to support knowledge transfer across resource ownership.

▶ **Testing:** during the testing phase, it's important to develop a testing strategy and scripts for unit testing, integration testing and user acceptance tests. The test scripts should align to the business requirements developed during the selection and design phases, and support users during all testing activities. Analysis and explanation of differences from expected results to identify configuration issues and functionality gaps are critical to support process sign-off.

▶ **Deploy and support:** the final stage of the implementation is the "deploy and support" stage in which materials for end-user training sessions and the preparation of data migration and deployment services are developed. This final stage normally ends with a lessons learned session with the project team and the leadership team.

Resource responsibilities

A TMS implementation is a major project that requires a joint effort from the regular treasury organization, the TMS vendor and an implementation advisor.

Treasury department

The role of the treasury department will be to define the scope and the desired end-state. The implementation effort of a TMS will vary from several hundreds of hours up to more than a thousand hours, depending on the complexity of the treasury organization and the scope of the implementation. On the basis of the responses collected for this TMS guide, most vendors agree that the client effort required is significant. When estimating the level of internal resource time required to support an implementation, client effort is often a multiple of the time estimate. Most treasury departments lack the resources and specific TMS knowledge to implement a new system on time and on budget without external support. As a result, we often see that the efforts from the TMS vendor and an implementation advisor are more than welcome for a smooth and timely implementation of a new TMS.

The expected role of the TMS vendor

The vendor will participate in design workshops and validate the future design of treasury processes. In addition, the vendor will review business requirements and address potential functionality gaps. During the testing phase, the vendor will resolve issues and implement necessary configuration changes. Moreover, the vendor will conduct prototyping sessions to validate process design decisions and they will conduct user training to ensure that system users get familiar with and used to the new application.

The expected role of the implementation advisor

On the basis of our experiences with TMS implementations and stories of successful or unsuccessful TMS implementations, we have determined that a TMS implementation is a time-consuming project that requires significant exertion from a treasury team. Further, a TMS implementation can require very specific knowledge and experience, and often such an implementation is new to the members of a treasury team. Therefore, consulting an external implementation advisor could reduce your implementation time significantly and increase the likelihood of successfully finalizing the project.

The role of an implementation advisor can vary on the basis of the availability of your staff and the scope of the implementation. Advisor implementation support services include reviewing relevant data, facilitating detailed future state design sessions, identifying potential detailed functionality gaps, developing workarounds, and spotting detailed cross-functional dependencies.

The typical advisor value-add is the documentation of business requirements, process flows and configuration design that supports the overall treasury technology road map.

Timing

Every corporate organization differs at least slightly from each other, as do treasury management systems. This means that there will never be a cookie-cutter implementation blueprint or plan that can be copied and pasted from one organization to another. The timeframe of an implementation depends on the scope, complexity, availability and experience of internal resources, and the use of an implementation advisor for project support and delivery. The project duration typically depends on the to-be implemented TMS: entry level typically takes three to six months from the start of deployment, mid-market can require six months up to one year, and high-end solutions may require a minimum of one year.

Success factors

Our experience demonstrates that success of a TMS implementation project is highly dependent on the following:

▶ **Detailed business process design:** end-to-end detailed design of treasury processes based on overall business objectives, long-term strategy for the treasury function and proven industry practices prior to starting the configuration of a TMS to avoid re-work

▶ **Cross-functional participation:** involvement of upstream and downstream process owners in the design and recommendation process in order to reduce dependency risk and provide better data for consumption and analysis

▶ **Well-thought-out TMS configuration:** striking a balance between meeting current and anticipated business requirements, and creating sufficient flexibility to address future business needs

▶ **Effective project management:** a comprehensive project management approach that takes a holistic view of the TMS implementation and addresses resource planning, process design, system implementation and interaction with other groups outside of treasury at every stage

▶ **Treasury ownership:** treasury should have a sense of ownership over the enabling technology and annually evaluate functional use and external needs

Vendor profiles

The following vendors completed questionnaires provided in September 2017 by EY relating to their products. EY has not verified or substantiated any of the information provided by the vendors, any of which could be materially inaccurate or misleading and does not in any way endorse or promote any products or services provided by these or any other vendors. Any opinions expressed are those of the vendors and not of EY.

3V Finance

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
3V FINANCE was born in 1987 as a part of VIEL & Cie, an international financial group with a global presence in 27 countries. VIEL & Cie holds 68.90 % of international broker Tradition.	Paris, France	‣ Brussels (Belgium) ‣ Lausanne (Switzerland) ‣ London (UK)

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
TITAN	2007 as a specialized Treasury & Risk management system for corporates, but 3V FINANCE was building derivative pricing tools for VIEL brokers since 1987.	‣ XChange interface middleware ‣ SMTP messaging ‣ SWIFT confirmations ‣ SWIFT reconciliation ‣ EMIR declarations to Trade repositories ‣ ASP hosting & back up ‣ Market data.	‣ English ‣ French ‣ Spanish (under investigation)

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	A TRMS offering: ‣ Transaction management and secure workflow ‣ Treasury standard and custom reporting ‣ Portfolio risk analysis and simulation ‣ Hedge accounting ‣ Integration with 3rd party tools
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Step 1: Analysis of system-specific specifications for each process to implement, identify nature of transactions and financial instruments, validate workflows, controls, limits and user profiles, collect reporting needs, analyze gap with functional expectations and define bypass solutions, validate accounting standards, define interfaces with other systems, validate IT security. Step 2: Installation, data migration, testing, users training Step 3: Go-live and post-production assistance
What is the current version of your system, and what year was it released?	TITAN Treasury was launched in 2007 and the current version is 4.76.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	One free new release per year but custom development can be delivered at any time.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	One major release per year. Each bug fixing or custom development requires a minor release.
On average how long does it take to upgrade?	One half day
Please provide a list of functionality delivered as part of the core solution.	‣ Transaction insertion ‣ Trade booking – Trade ticket ‣ Transactions workflow ‣ Portfolio valuation ‣ Pricing, sensitivity ‣ To do list, alerts ‣ Document storage ‣ Payment schedule ‣ Statistics ‣ Audit trail ‣ Calendar changing for backwardation ‣ Automatic calculation broker fees or transaction costs ‣ Inter-company deals with business units
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	3V FINANCE provides its own middleware called Xchange for integration.
Please list the supported third party report writers.	N/A

BELLIN GmbH

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
BELLIN was founded in 1998 by Martin Bellin to provide companies with a more pragmatic approach to the challenges of daily treasury management. The following years saw BELLIN assume a pioneering role: BELLIN was the first to offer a web-based TMS in 2004, SaaS hosting one year later and a fully integrated payments functionality in 2006 with an integrated SWIFT connectivity in 2014. Since 2016, BELLIN has been offering Treasury as a Service (TaaS), the outsourcing of repetitive treasury operations.	Ettenheim, Germany	‣ London (UK) ‣ Vancouver (Canada)

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
tm5	The first BELLIN treasury management system was launched in 1999.	‣ Hosting service, SWIFT connectivity ‣ Treasury as a Service (TaaS) ‣ EMIR (reporting and connectivity to RegisTR) ‣ Matching Service (Deal confirmation matching)	‣ English ‣ German

Section 2 − General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ tm5 is fully integrated and web-based ‣ tm5 offers an embedded payment gateway with integrated direct access to the SWIFT network, which enables electronic confirmation matching and use of trade finance products ‣ tm5 is modular and easy to use ‣ tm5 is a zero-user-fee platform ‣ Various hosting options (onsite, SaaS − single-tenant or multi-tenant)
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	The standard implementation team consists of at least one senior treasury consultant and one treasury consultant. This implementation team will accompany the customer as primary contacts in addition to our service and support team. During the implementation, the main stakeholders of the customer are trained to administer the application and run all tm5 functionalities. Additional users will be trained in the rollout phase following the initial implementation.
What is the current version of your system, and what year was it released?	tm5, 2009
What is your development strategy (e.g., in-house vs. outsourced)?	BELLIN develops in-house with dedicated Development and Strategies & Research departments.
Can you describe your release policy and frequency?	BELLIN provides new functionality of tm5 with one to two patch days a year. This is included in the maintenance fee but optional. BELLIN supports all versions of its products.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Upgrades are released on one to two patch days a year. Minor bug fixes do not require a new release, they are patched on a daily basis.
On average how long does it take to upgrade?	A patch day upgrade typically only takes a few hours. Upgrades are scheduled, giving customers the opportunity to upgrade when it suits their business needs.
Please provide a list of functionality delivered as part of the core solution.	tm5 has a modular setup; the different components provide functionality for cash management, payment factory, real-time financial status, liquidity planning, contract management, IC dealing platform, valuation, risk management, IC reconciliation, netting, and receivables management.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	tm5 is a pure web application and operates on Microsoft SQL and IIS. No other middleware is needed. All interfaces for import or export of files to any other 3rd party applications are subject to international standards.
Please list the supported third party report writers.	In addition to the integrated reporting options in tm5 and individual dashboards offered by BELLIN, PwC offers "Treasury Analytics", a separate tool based on tm5 combined with other data sources.

Calypso Technology

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Calypso was founded in 1997 by Charles Marston and Kishore Bopardikar. The original founders recently sold their interest to two private equity firms, Bridgepoint and Summit Partners.	San Francisco, CA	21 offices around the world, including major financial centers such as London, New York, Paris, and Hong Kong.

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Calypso	1998	Calypso provides a range of non-core value added services, including: ‣ Hosting services/SaaS ‣ Software management (Deployment, testing) ‣ Security and audit ‣ Infrastructure monitoring ‣ Configuration and setup ‣ Testing	‣ English ‣ French ‣ Spanish ‣ Other – we have a number of non-English speaking support analysts who can take phone calls in their native language (from around the world), however we require all written support tickets to be in English.

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Cross-asset, front-to-back ‣ Asset liability management ‣ Cash & liquidity management ‣ Regulatory compliance ‣ Integrated banking book/trading book risk management
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Calypso takes a flexible approach to implementation. The majority of clients hire our Professional Services team to deploy the system, generally rolling out larger projects in phases. However we have clients who choose to implement using third party integrators as well as internal resources, employing Calypso PS only in an advisory capacity. We have achieved success with all of the models, so we encourage our clients to choose the option they prefer.
What is the current version of your system, and what year was it released?	Version 15, 2016
What is your development strategy (e.g., in-house vs. outsourced)?	In house. Over 50% of our staff is dedicated to product R&D.
Can you describe your release policy and frequency?	**Major release:** Size: ~15,000 man/days Frequency: 18-30 months Functional & Architectural Changes Artifact: Installer **Minor release:** Size: ~5,000 man/days Frequency: 6-8 months Only Functional Changes Artifact: Installer
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Enhancements come from a variety of sources. Regulatory changes are of course critical drivers, as are client requests. We also monitor developments in the market to come up with innovations that will benefit our users. Prioritizing specific enhancements is done by analyzing the queue of requests and determining the maximum ROI for our clients. Fixes can be delivered as hotfixes or as minor releases.
On average how long does it take to upgrade?	Six to nine months.
Please provide a list of functionality delivered as part of the core solution.	‣ Trade capture ‣ Pricing ‣ Profit and loss (P&L) ‣ Credit limits ‣ Market risk ‣ Treasury ladder ‣ Treasury position limits ‣ Behavioral scenario modeling ‣ Banking book integration and risk management ‣ Back office postings ‣ Trade life cycle and settlement ‣ Corporate actions ‣ Trade matching ‣ Nostro management ‣ Accounting ‣ Hedge accounting
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	Calypso provides standard JMS bus out-of-the-box for data and event communication between Calypso components. Calypso also supports integration with middleware such as MQ, JMS, TIBCO etc. for external integration.
Please list the supported third party report writers.	Calypso provides reporting framework out-of-the-box that can be integrated with external tools such as crystal reports, business objects etc. using Calypso's open java API.

COPS GmbH

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
COPS is since 1979, thanks to their ever-growing know-how, a successful provider in this sensitive business that has grown simultaneously with the financial industry. Over the years, we have never deviated from our target: creation of tried and tested solutions to the state of the art. COPS is a private company where the ownership between two families and the management split.	Vienna (Austria)	‣ Wetzlar (Germany) ‣ Hamburg (Germany) ‣ Prague (Czech Republic) ‣ Brno (Czech Republic)

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
corima.cfs	2004 (first customer launch of the COPS TMS-solution)	The company COPS is partner of SWIFT and Axway (Middleware).	‣ English ‣ Czech ‣ Danish ‣ German ‣ Slovak

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Comfortable user guidance due to standardized concept to design the surfaces of the system ‣ Flexible storing of application profiles and uniform authorization concept for all functions of the system ‣ Standardized master data model for all module areas ‣ (Standardized) interface concept to enable a connection to both upstream and downstream IT systems ‣ Mapping and managing of Treasury-processes by combining the system modules
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	The following phases will be passed during the implementation project: ‣ Conception phase ‣ Implementation/parameterization phase ‣ Testing phase (module- and integration tests) ‣ User acceptance phase ‣ Stabilization phase In the training we pursue the "Train the Trainer" concept with the aim of the "key users" prompt and step-by-step to become familiar with the functionalities of the system from the beginning of the implementation phase incorporated into the implementation/parameterization process.

Section 2 – General system and solution information (continued)

EY questions	Vendor responses	
What is the current version of your system, and what year was it released?	SR 1.11 Update 2 (July 2016).	
What is your development strategy (e.g., in-house vs. outsourced)?	The standard offer is an in-house-solution. Furthermore corima.cfs can be operated on outsourcing-basis (= ext. data center) just as IT-outsourcing, but also as full outsourcing (= technical and IT-support is done by COPS).	
Can you describe your release policy and frequency?	‣ COPS provides two major releases of corima.cfs each year. Two additional updates are provided between the major releases. It is not necessary to install every major release or even every update. ‣ Each package, no matter if major release or update comes with detailed release-notes, describing the changes and how to deal with it. ‣ Each package comes with detailed installation instructions and an updated user manual.	
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	COPS provides two major releases of corima.cfs each year. Two additional updates (minor release) are provided between the major releases. Bug fixes (hot fixes) are handled on-demand and based on major releases as well as updates. Bug fixes do not require a change of release.	
On average how long does it take to upgrade?	Between two weeks and three months, including migration and test-processes (depending on the customer-interfaces and the used modules/functionality)	
Please provide a list of functionality delivered as part of the core solution.	corima.cfs is based on the following module areas: ‣ Cash management ‣ Transaction management (front- and back office) ‣ Financial status/liquidity planning	‣ Risk management ‣ Financial assets management (asset management) ‣ Accounting based on an underlying standardized master data management
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	corima.cfs has a standard import and export interface incl. associated mapping tools, with which data in several formats (.txt, .csv, .xml etc.) can be imported or exported. For more specific technical connections, the involvement of an additional external middleware may be required.	
Please list the supported third party report writers.	We have experience with various report software products like Crystal Reports (embedded), SSRS (embedded), Business Objects etc. Our TMS provides a disclosed and well-documented database, which might be accessed by any third party report software that is capable of accessing to the database.	

Exalog

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Founded in 1984, Exalog is a SAS company, family owned. We offer full SaaS software since 1999. Average growth for the past 10 years = 17%.	Boulogne Billancourt (Paris region), France	~~NYC~~

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Allmybanks	2008	‣ SWIFT L2BA platform (Alliance Lite2 for Business Application) ‣ ISO 20022 convertor	‣ English ‣ French ‣ German ‣ Italian ‣ Mandarin ‣ Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Allmybanks is a cash management software that allows: ▸ Multi-bank consolidation of account statements ▸ Collections and payments management, PoBo, validation workflow, third party database ▸ Operational treasury management, forecasts, reconciliation, cash pooling, intercompany transactions, monitoring of financing and investment, cash flow budgets, bank fees, reporting ▸ Security administration settings: users, companies, accounts, validation workflow
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	The implementation methodology consists of a preliminary study confirmed through a pilot project: ▸ Exalog consultant coordinates the project with the client's project manager ▸ Onsite preliminary study defines planning and required resources ▸ Skill transfer is made to the client's project team ▸ Pilot project is launched to validate the preliminary study ▸ Experience feedback is gained from Pilot Project and optimization of implementation processes. Then, Exalog offers two options: ▸ Autonomous project: the client's project team finalizes the setup with a remote support from Exalog consultant ▸ Turnkey project: Exalog consultant takes over the full setup.
What is the current version of your system, and what year was it released?	The current version has been released in ~~April 2016~~.
What is your development strategy (e.g., in-house vs. outsourced)?	75% in-house 25% outsourcing
Can you describe your release policy and frequency?	▸ Three to four for intermediate and one major per year ▸ End users are informed by email two months before ▸ No interruption of the system is requested
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Three to four for intermediate and one major per year
On average how long does it take to upgrade?	Automated upgrades by Exalog – No customer's interventions are required.
Please provide a list of functionality delivered as part of the core solution.	
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	
Please list the supported third party report writers.	Any SQL based report tool

Financial Sciences Corporation (FSC)

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
FSC was founded in 1987 in New York City. FSC is a privately held corporation.	Jersey City, New Jersey	Branch office in Beijing (China)

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
ATOM Treasury Management System	1995	In addition to ATOM Treasury and Risk, FSC offers solutions for commercial loan syndications, and China specific treasury services.	‣ English ‣ Cantonese ‣ Danish ‣ Gujarati ‣ Mandarin ‣ Portuguese ‣ Spanish ‣ Turkish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	ATOM is a comprehensive TMS/eTRMS where treasuries can manage all of their needs in one complete, uniquely visual web-based platform. ATOM provides treasury management solutions for: ‣ Cash management, payments, and banking ‣ Forecasting and liquidity ‣ Investments, debt and credit ‣ Hedging, risk and compliance ‣ Financial reporting
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	FSC puts a priority on short on-boarding efforts including recommending phased implementations as appropriate. ATOM onboarding typically consists of an analysis phase and an implementation phase. The main components of the two phases are: **Analysis phase** ‣ Project management plan ‣ Data conversion plan ‣ Data entitlements, user security plan ‣ Review of customer acceptance plan ‣ Production cutover plan ‣ Customer specific enhancement/ interface requirements (if applicable) **Implementation phase** ‣ Network access, security and enabling customer access ‣ Training (typically mix of onsite and remote, customer chooses whether train-the-trainer, etc.) ‣ Data setup ‣ Data conversion ‣ Support for customer acceptance testing ‣ Mock cutover testing ‣ Production cutover

Section 2 – General system and solution information (continued)

EY questions	Vendor responses	
What is the current version of your system, and what year was it released?	ATOM 9, 2015	
What is your development strategy (e.g., in-house vs. outsourced)?	In-house	
Can you describe your release policy and frequency?	Major releases approximately once per year per module. Minor/patch release more frequently as required. Releases are scheduled according to the development priorities listed below.	
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Major releases approximately once per year per module. Minor/patch release more frequently as required. Patches do not require full releases.	
On average how long does it take to upgrade?	This varies depending on the deployment model (SaaS vs. installed), and on the client size.	
Please provide a list of functionality delivered as part of the core solution.	ATOM provides the following treasury management functionality: ‣ Cash and liquidity management ‣ Multi-currency cash positioning and forecasting ‣ Payments – support for all global payment types with seamless integration with banks and SWIFT ‣ Bank reconciliation ‣ Cash pooling and target balancing **Bank relationship management** ‣ Bank account management ‣ Bank services and performance ‣ Bank fee analysis ‣ FBAR tracking and reporting ‣ Bank contact and meeting tracking ‣ Signer management and workflow ‣ eBAM **Debt, credit and investments** ‣ Fixed and floating rate instruments ‣ CP, CDs and money funds ‣ Credit facilities, guarantees and LOCs ‣ Gov, Corp, Agency and ABS securities ‣ Brazilian, Chinese, Emerging Markets calculations ‣ Intercompany transactions	**Risk management and hedging** ‣ Forex spots, forwards, swaps, options and NDFs ‣ Interest rate swaps and options ‣ Commodity futures, swaps, & options ‣ Credit derivatives ‣ Hedge creation and testing for automated compliance ‣ Analytics for fair value, CVA, sensitivity and scenario calculations **Financial reporting** ‣ GAAP & IAS reporting compliance ‣ Complete sub ledger ‣ Integrated auditing ‣ Automated integration with ERPs such as SAP, PeopleSoft, JDE and Oracle ‣ Automation for FAS 815 and IFRS 9 hedge accounting compliance
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	None required.	
Please list the supported third party report writers.	Third party report writers such as Cognos, Business Objects, Crystal etc. are supported at customer request. However, nearly all customers prefer ATOM's built-in business intelligence reporting capabilities.	

Fidelity Information Services, LLC (FIS) − Integrity

Section 1 − General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
FIS traces its history to the 1960s. Since then, the company has continued to expand its service offerings for financial institutions of all sizes. In December 2015, FIS acquired SunGard, one of the world's leading software and technology services companies. The acquisition uniquely positioned FIS to offer a broad range of enterprise banking and capital markets capabilities that further empower the financial industry worldwide.	Jacksonville, FL	‣ Calabasas, California ‣ Carlstadt, New Jersey ‣ Chicago, Illinois ‣ Jacksonville, Florida ‣ Montreal, Quebec ‣ Parsippany, New Jersey ‣ Philadelphia, Pennsylvania ‣ San Mateo, California ‣ Stamford, Connecticut ‣ Toronto, Ontario

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Integrity	Integrity was first installed and fully implemented in 1997.	Yes, we have institutionalized a "managed service" function, which provides a layer of services on top of our traditional services and software offerings. These managed services include private and public cloud hosting, managed bank connectivity, interface management, and reporting.	English, Arabic, Cantonese, Czech, Danish, Dutch, French, German, Gujarati, Italian, Mandarin, Polish, Portuguese,Russian, Slovak, Spanish, Swedish, Ukrainian, and others.

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Integrity is a comprehensive and scalable treasury management application. ‣ Functional support areas include cash management, forecasting, debt/investment management, FX hedging, interest rate hedging, commodities, equities, reporting/dashboards, accounting and ERP integration. ‣ Integrity is web-based application, its flexible configuration allows for use across a variety of industries such as financial services, manufacturing, insurance and utilities.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	FIS' standard implementation approach is based on a collaborative effort whereby both the customer and FIS work together to achieve a common objective. This collaborative approach includes, but is not limited to, joint project management roles, joint workshop responsibilities, and joint project meetings. FIS will perform a site audit to evaluate the extent of the project. FIS will provide a SOW, which will form the basis of the implementation, and a detailed Implementation Plan.
What is the current version of your system, and what year was it released?	Integrity version ~~8.5.1~~ was released in ~~October 2015~~.
What is your development strategy (e.g., in-house vs. outsourced)?	All development is done in-house.
Can you describe your release policy and frequency?	Integrity follows a semi-annual release policy under which we expect to release a new version in May and November of each year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	~~FIS releases two major versions of the software per year, with minor releases for bug fixes released mid-cycle as needed.~~ ~~These new releases can be managed via an ad-hoc consulting agreement or as part of the Managed Upgrade Service.~~
On average how long does it take to upgrade?	We provide highly productionized and efficient upgrades. Upgrade times vary by client configuration, deployment method, and time from last upgrade. Upgrades for our SaaS clients are automated on a scheduled basis.
Please provide a list of functionality delivered as part of the core solution.	‣ Cash management ‣ Hedge accounting ‣ Cash forecasting ‣ Debt and investment management ‣ Cash reconciliation ‣ Interest rate hedging management ‣ Electronic funds transfer ‣ eBAM/bank fee analysis ‣ FX Hedging management ‣ GL integration ‣ Commodity hedging management ‣ Dashboards/reporting
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	Interfaces and integration with the banks and external systems such as ERPs involve both the connectivity component as well as the file formatting. Connectivity is commonly done via either sFTP or SWIFT. Files being transferred externally (such as payment files) are typically encrypted using the encryption tool as specific by the receiving bank. File formatting is done using a data mapping tool called ~~DTS (Data Transformation Service)~~. Through ~~D~~TS, data definitions and maps are built within the system for interfaces in or exports out of the system. This tool also includes process actions that tell the system how to handle the data, for example filtering for key pieces of information or positions in the file. With the interfaces built, the system's scheduling tool is used to determine the timing and frequency of importing or exporting of data. ~~D~~TS can import files formats such as BAI, SWIFT, comma and tab delimited (i.e., csv), fixed length, free format, XML and Excel.
Please list the supported third party report writers.	Customers have the option of using Crystal Report Writer for user defined reporting. A license would need to be obtained by the customer for Crystal Reports.

Fidelity Information Services, LLC (FIS) – Quantum

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
FIS traces its history to the 1960s. Since then, the company has continued to expand its service offerings for financial institutions of all sizes. In December 2015, FIS acquired SunGard, one of the world's leading software and technology services companies. The acquisition uniquely positioned FIS to offer a broad range of enterprise banking and capital markets capabilities that further empower the financial industry worldwide.	Jacksonville, FL	‣ Calabasas, California ‣ Carlstadt, New Jersey ‣ Chicago, Illinois ‣ Jacksonville, Florida ‣ Montreal, Quebec ‣ Parsippany, New Jersey ‣ Philadelphia, Pennsylvania ‣ San Mateo, California ‣ Stamford, Connecticut ‣ Toronto, Ontario

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Quantum	1995	Yes, we have institutionalized a "managed service" function, which provides a layer of services on top of our traditional services and software offerings. These managed services include private and public cloud hosting, managed bank connectivity, interface management, and reporting.	English, Arabic, Cantonese, Czech, Danish, Dutch, French, German, Gujarati, Italian, Mandarin, Polish, Portuguese,Russian, Slovak, Spanish, Swedish, Ukrainian, and others.

Section 2 − General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Quantum is a high end treasury application typically deployed by organizations with sophisticated treasury requirements covering: Cash, Front, Middle, and Back Office, extensive Risk Management and Hedge Accounting support. ‣ Quantum also provides an open and fully documented API that can be used by customers and their IT department to meet very specific requirements around integration and functional support.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	FIS' standard implementation approach is based on a collaborative effort whereby both the customer and FIS work together to achieve a common objective. This collaborative approach includes, but is not limited to, joint project management roles, joint workshop responsibilities, and joint project meetings. FIS will perform a site audit to evaluate the extent of the project. FIS will provide a SOW, which will form the basis of the implementation, and a detailed Implementation Plan.
What is the current version of your system, and what year was it released?	Quantum version 6.2 was released in November 2015.
What is your development strategy (e.g., in-house vs. outsourced)?	All development is done in-house.
Can you describe your release policy and frequency?	One new version release is provided each year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	FIS releases two major version of the software per year, with minor releases for bug fixes released mid-cycle as needed. These new releases can be managed via an ad-hoc consulting agreement or as part of the Managed Upgrade Service.
On average how long does it take to upgrade?	We provide highly productionized and efficient upgrades through our managed upgrade service. Upgrade times vary by client configuration, deployment method, and time of last upgrade.
Please provide a list of functionality delivered as part of the core solution.	Quantum offers very broad functionality, the core of which would include the following: ‣ Cash Management: Cash positioning, reconciliation, cash pooling, transaction processing ‣ Risk Management: Interest, FX commodities, credit, etc. ‣ Debt and Investment Management: Short-term cash, intercompany loans external debts and front to back office ‣ In-House Banking: Bank account administration, payments centralization, netting ‣ Reporting: KPI, ad-hoc, dashboard, etc. ‣ Accounting and Hedge Accounting
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	Quantum includes the ability to map third party file structures from external systems such as GL, Market Data, Banks, Trading, Confirmation, etc., for import and export.
Please list the supported third party report writers.	Aside from Ad-hoc reporting customers can also use Crystal Reports, Business Objects and other third party report writers on top of a Quantum database.

GTreasury

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Founded in 1986, GTreasury is the global leader of Treasury Management Solution (TMS) software for organizations spanning the globe. Orazio Pater, our founder, was a cash management pioneer while at Honeywell from 1969 to 1974. He developed one of the first Treasury Management systems in the world. From late 1974 to 1984, Pater led the cash management division of National Data Corporation (NDC). Over 12,000 corpora-tions used the NDC treasury management systems worldwide as a time-share and data exchange service. Formerly known as Gateway Systems, Inc., the first Gateway System was delivered to American Ex-press Bank in Europe in 1986. During the late 80's and early 90's the Gateway Treasury Workstation was fully developed and was installed in 14,000 banks and corporations worldwide. The company was re-branded to GTreasury in 2008, and over the many years of operation, GTreasury has remained privately owned and operated, completely independent, and focuses solely on solutions for treasury management. In 2016, GTreasury celebrated its 30th anniversary. We have remained a leader in our industry for all these years. Our system has been recognized a best-in-breed by leading corporations and banks worldwide. GTreasury's software illuminates treasury liquidity by centralizing all incoming and out-going banking activities and tracking all financial instrument transactions, thereby granting GTreasury users real-time insight and access to the liquidity of their treasury operations. The modular and scala-ble platform allows any size treasury operation to tailor a solution to their individual needs.	Lake Zurich, IL	‣ London, UK

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
GTreasury	Install Model – 1986 SaaS/Hosted – 2000	GTreasury provides a broad range of additional treasury centered products and services, including custom training, report writing, interface design, and template/model creation. The following is a list of additional products and services offered : ‣ Reports or dashboards not included in the standard offering ‣ Bank reporting or funds transfer communications or interfaces ‣ Back office interfaces ‣ Test environments ‣ Production environments	‣ English ‣ French ‣ Coming soon - Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less please provide a brief description of your product.	The GTreasury Management system optimizes cash and liquidity through: ‣ Comprehensive Balance Reporting ‣ Extensive Cash Forecasting and Cash Positioning ‣ Exceptional Payment Processing ‣ Complete eBAM and Account Analysis Along with these robust treasury features, the system also focuses on tight user security, compliant audit trails, user-defined scheduling, workflow governance and analytical reporting.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turn key)?	Our implementation approach and methodology consist of a full service and support package. We first assign your organization a team of experienced Treasury Solution Analysts, who initially conduct a Pre-Implementation Meeting to develop a thorough un-derstanding of your organization, operating processes and treasury needs. The resulting mutually agreed upon project plan details everything you and GTreasury must do to prepare for the implementation. Following the initial meeting, our staff of Treasury Solution Analysts will primarily focus on setting up your database, creating import interfaces and testing all processes involved in the project. During this phase, we will conduct in-depth training sessions that include train the trainer. Once these activities are completed, we will bring in our Client Support team, who will be your pri-mary contacts for all your continued support.
What is the current version of your system, and what year was it released?	Our latest version is 2017.9, and it was released within the last six weeks. GTreasury practices the Agile development methodology where our system updates approximately every six (6) weeks. A client webinar is conducted in conjunction with each new release to inform our users of the details regarding the contents of the update and any new functionality. A copy of all release notes, user guides, and other product information are available in the GTreasury Community to all licensed users.

GTreasury (continued)

Section 2 – General system and solution information

What is your development strategy (e.g., in-house vs. outsourced)?	Since the beginning, GTreasury has focused solely on the treasury management industry and each year; it invests 50% of revenue into new product development. GTreasury remains dedicated to leveraging the latest and most significant technologies as well as integrating client feedback when appropriate. All development is done in-house.
	The strategy for product development diversification is looking at the current product and seeing what features can be enhanced and what development is needed to increase market share in new regions. GTreasury evaluates and prioritizes the new projects for the product road-map based on the following criteria:
	Strategic Initiative: Determines if the project is for innovation purposes or operational efficiency.
	Product Initiative: Determines if the project will create a competitive advantage, increased market share, adhere to new compli-ance requirements, or directly provides enhanced functionality.
	Return on Investment: Evaluates the efficiency of the project
	Customer Value & Priority: Evaluate based on client feedback
	GTreasury works very closely with our clients and uses their feedback to refine and optimize future product releases, in turn adding more value to our existing product. As GTreasury continues its expansion to a global market, it is meaningful to those clients that we can support a multitude of languages as well as be responsive to the ever-changing advances in technology, multi-factor security, and auditing requirements.
Can you describe your release policy and frequency?	GTreasury develops software under the Agile Development methodology, using a six-week development cycle for inter-im updates. In accordance with our Agile process, every development cycle includes a mixture of system fixes and enhancements. Enhancements are based on input from many sources, including clients. SaaS application updates and releases are applied automatically at the server level. Clients are notified about ten days in advance via email of the upcoming release date with a copy of the release notes. GTreasury hosts a webinar the day before the release to show users the system changes and enhancements and documentation on the release contents are published in the GTreasury Community. The GTreasury Community also provides product training, support, and a venue for leaving product feedback. These updates are scheduled to occur on weekends to avoid any interruption of service, and the update process typically takes two (2) hours or less. For the Client Hosted version of our application, users are highly encouraged to install updates when available to ensure they receive the proper level of support and functionality. Many support issues are corrected by installing updates; failure to establish a patch may result in unresolved issues. Another consideration is that non-installation of any patch makes it impossible to install subsequent patches. To ensure the best customer experience, clients are advised to apply all update patches as they become available.

Section 2 − General system and solution information (continued)

How many releases are sched-uled per year? Please distin-guish between major (functionality) and minor re-leases. Do all (minor) bug fixes require a new release?	GTreasury is an Agile shop and releases a new version every six (6) weeks. Each release is a mixture of system fixes and enhance-ments. Hotfixes are prioritized based on criticality and user impact. They are released as soon as they are approved for deployment.
On average how long does it take to upgrade?	Updates are scheduled to occur on weekends to avoid any interruption of service, and the update process typically takes two (2) hours or less.
Please provide a list of func-tionality delivered as part of the core solution.	Focusing on capital management needs, GTreasury provides a centralized solution for liquidity management, including manage-ment of cash holdings, transfers, automation, banking, forecasting, reporting, and many other treasury features. Core features include: ‣ Workspace Dashboards and Reporting ‣ Cash Management ‣ Setup ‣ Security Optional modular add-ons include: ‣ Financial Instruments ‣ Funds Transfers ‣ Accounting ‣ Bank Account Management Rather than a ''one size fits all'' approach, tailoring software is our approach to meeting unique treasury needs. As your organiza-tions grow and develop, we will be able to adapt to all your treasury needs.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system for-mat).	The application interfaces are predominantly HTTP web services and file-based import/export extracts. Files can be transformed to/from basic formats including CSV etc. Once user establish processes and business requirements, the appropriate method of integration is then selected. The GTreasury application does not utilize middleware.
Please list the supported third- party report writers.	GTreasury provides an integrated 3rd-party report writer called Izenda. This tool is robust, flexible, and easy to use. GTreasury system users can create a full list of reports, charts, graphs, and dashboards at no additional charge. Additionally, clients using the installed version of the application may create their own reports using any report writer capable of accessing an ODBC data source.

Hanse Orga

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
The Hanse Orga AG was founded by Hans Herbert Lindemann in 1984 with a focus on providing consultancy and software solutions to companies seeking to enhance their financial supply chain management. The company, headquartered in Hamburg, Germany, is an independent and privately-owned company with over 270 employees worldwide today. Due to ongoing growth of the international activities, Hanse Orga started to establish a network of subsidiaries in 2004. Today they spread across the Netherlands, France, UK, Switzerland, Spain, Romania, Hong Kong, and the USA covering the three regions EMEA, North America and APAC.	Hamburg, Germany	‣ Breda, Netherlands ‣ Paris, France ‣ London, UK ‣ Zurich, Switzerland ‣ Madrid, Spain ‣ Bucharest, Romania ‣ Hong Kong SAR, China ‣ Chicago, US ‣ New York City, US

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
FS² (Product Family consisting of multiple modules and adding value throughout the entire financial supply chain).	1984. The individual modules being bundled in the current Treasury Management System have been developed in SAP since 2000.	Hanse Orga offers a comprehensive consulting approach aligned with software solution addressing needs of SAP-customers but also other ERP environments. Hanse Orga is a true global vendor serving many multinational corporates with very scalable and flexible solutions accommodating regional and legal requirements across all regions.	‣ English ‣ Cantonese ‣ French ‣ German ‣ Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ SAP integrated TMS leveraging customer's investment in SAP ‣ Comprehensive solution covering all functional needs in Finance and Treasury ‣ IHB and POBO solution integrated and linked to Payments and Cash Management ‣ Best in Class AR and Working Capital Management Reporting included ‣ Enhanced Business Intelligence Reporting
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Hanse Orga's project implementation procedures and standards are based on SAP's methodology ASAP drawing from SAP's best-practices repository and being enhanced with learnings from Hanse Orga's vast project experience of over 30 years and from industry best practices of managing SAP-related projects. We follow the proven ASAP steps including project preparation, blue print, realization, final preparations, go-live and support beyond the end of the project. Clients value our user-driven approach and our train the trainer concept empowering the customer to do the configuration without our support after Go Live resulting in over 2,000 successful projects on time and on budget.
What is the current version of your system, and what year was it released?	FS² has been launched in Q4 of 2016
What is your development strategy (e.g., in-house vs. outsourced)?	Hanse Orga develops all functionalities in-house in a central location in Germany.
Can you describe your release policy and frequency?	New releases are launched once a year, customers do not necessarily have to upgrade.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	One big release per year, minor customer-specific requirements and bug fixes don't require new releases but are included in individual patches.
On average how long does it take to upgrade?	An upgrade incl. testing can be realized in between 1 and 3 days, due to SAP integration the IT team is involved to a low extent.
Please provide a list of functionality delivered as part of the core solution.	See FS² product overview for the SAP-based solutions.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	
Please list the supported third party report writers.	The system supports all known report writers (e.g., SAP BO, Lumira, Design Studio, Qlik View, MS-excel, etc.)

ION Group – CityFinancials

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
ION Group is an industry leading provider of automation solutions and mission critical applications. We enable financial institutions, central banks and corporations to digitize and automate their most critical business processes. We are reinventing the way business is done through our innovations in automation technology. ION Treasury is the largest dedicated provider of treasury and risk management solutions in the world. ION promotes a multi-product strategy to best address different treasury customers' unique requirements: a. We have seven products and over 1,250+ clients in more than 30 countries around the world b. ION Treasury meets the needs of organizations with varying complexities and at different stages of technology adoption We are the only corporate treasury provider with the ability to deliver on treasury's diverse and changing technology needs through: a. Commitment to continuous innovation b. Track record of successful delivery c. Financial strength with a multi-decade strategic view	New York, London, Sydney	40+ offices around the world

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
City Financials	2001	‣ T-Arc: a comprehensive data modeling, reporting and analytics solution ‣ Treasury Anywhere: a device agnostic treasury application allowing teams to access information from their ION TMS at any time, using any device they have on hand – mobile, tablet, laptop, PC ‣ iBAM: ION Bank Account Management, a tool that centralizes accounts, approvers, signatories and documentation; automating the management of bank account workflow, document generation and reporting	‣ English

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	City Financials is a pre-configured treasury and risk management system designed around standard treasury practices and is delivered securely within a private cloud. It is a cost-effective solution for large, multinational corporations with centralized treasuries in need of a strong, standardized control environment. City Financials requires minimal IT support. It provides a simple logical user experience, easily managed directly within the treasury operation itself.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	N/A
What is the current version of your system, and what year was it released?	Our latest version 2.09 was released in January 2018.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	Releases are scheduled quarterly. Major product versions are released every 12–15 months.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	City Financials releases optional updates quarterly that roll up into a major release every 12–15 months. Patches are deployed quarterly.
On average how long does it take to upgrade?	Upgrades are run on an individual basis, scheduled along with each client to minimize disruptions. Typically, upgrades take place outside of core business hours.
Please provide a list of functionality delivered as part of the core solution.	Please refer to our website for additional details about the functionality of our solution.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	N/A

ION Group – IT2

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
ION Group is an industry leading provider of automation solutions and mission critical applications. We enable financial institutions, central banks and corporations to digitize and automate their most critical business processes. We are reinventing the way business is done through our innovations in automation technology. ION Treasury is the largest dedicated provider of treasury and risk management solutions in the world. ION promotes a multi-product strategy to best address different treasury customers' unique requirements: a. We have seven products and over 1,250+ clients in more than 30 countries around the world b. ION Treasury meets the needs of organizations with varying complexities and at different stages of technology adoption We are the only corporate treasury provider with the ability to deliver on treasury's diverse and changing technology needs through: a. Commitment to continuous innovation b. Track record of successful delivery c. Financial strength with a multi-decade strategic view	New York, London, Sydney	40+ offices around the world

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
IT2	1992	‣ T-Arc: a comprehensive data modeling, reporting and analytics solution ‣ Treasury Anywhere: a device agnostic treasury application allowing teams to access information from their ION TMS at any time, using any device they have on hand – mobile, tablet, laptop, PC ‣ iBAM: ION Bank Account Management, a tool that centralizes accounts, approvers, signatories and documentation; automating the management of bank account workflow, document generation and reporting	‣ English ‣ Dutch

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	IT2 is a highly-configurable treasury and risk management system, offering a superior visual user experience. Built for the comprehensive needs of international treasury operations, IT2 provides an integrated framework for visually mapping treasury policy, processes and performance. IT2's professional services team works with corporate IT teams to easily integrate into third-party systems.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	N/A
What is the current version of your system, and what year was it released?	Our latest version 8.5 was released in March 2018.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	Releases are scheduled quarterly through the year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	One major release and 4–5 quarterly feature packs. Minor bug fixes are released as service packs and issued to individual customers as required.
On average how long does it take to upgrade?	A typical upgrade project runs for approximately six weeks, from kick-off through to go-live on the upgraded version.
Please provide a list of functionality delivered as part of the core solution.	Please refer to our website for additional details about the functionality of our solution.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	N/A

ION Group – OpenLink

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
ION Group is an industry leading provider of automation solutions and mission critical applications. We enable financial institutions, central banks and corporations to digitize and automate their most critical business processes. We are reinventing the way business is done through our innovations in automation technology. ION Treasury is the largest dedicated provider of treasury and risk management solutions in the world. ION promotes a multi-product strategy to best address different treasury customers' unique requirements: a. We have seven products and over 1,250+ clients in more than 30 countries around the world b. ION Treasury meets the needs of organizations with varying complexities and at different stages of technology adoption We are the only corporate treasury provider with the ability to deliver on treasury's diverse and changing technology needs through: a. Commitment to continuous innovation b. Track record of successful delivery c. Financial strength with a multi-decade strategic view	New York, London, Sydney	40+ offices around the world

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Openlink	1994	‣ Cloud hosting options ‣ Risk as a Service ‣ iBAM: ION Bank Account Management, a tool that centralizes accounts, approvers, signatories and documentation; automating the management of bank account workflow, document generation, reporting	‣ English ‣ German ‣ Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Openlink provides Findur, an enterprise Treasury and Risk Management solution, and Endur, a Commodities and Energy Trading Risk Management platform which, combined as one enterprise solution, provides the benefits of treasury and risk coverage for complex commodity intensive corporates. It provides operational and analytical support of an unparalleled breadth of commodity and financial asset classes, and provides for cash management, hedge effectiveness and accounting in one application providing a single source of truth for the entire organization. It is an open system, highly configurable and customizable, yet provides accelerators for quick implementations reflecting standard market practices. There are options to host it on-premises and in the cloud.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	N/A
What is the current version of your system, and what year was it released?	Our latest version 16.1 was released in 2017. Version 17.0 will be released H2 2018.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	Major releases are approximately every 12–18 months. Interim maintenance releases are scheduled on a periodic basis based on the age of the release.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	One major release every 12–18 months and semi-annual minor releases.
On average how long does it take to upgrade?	Upgrade times depend on the complexity of the client, amount of users, and new features being utilized.
Please provide a list of functionality delivered as part of the core solution.	Please refer to our website for additional details about the functionality of our solution.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	N/A

ION Group – Reval

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
ION Group is an industry leading provider of automation solutions and mission critical applications. We enable financial institutions, central banks and corporations to digitize and automate their most critical business processes. We are reinventing the way business is done through our innovations in automation technology. ION Treasury is the largest dedicated provider of treasury and risk management solutions in the world. ION promotes a multi-product strategy to best address different treasury customers' unique requirements: a. We have seven products and over 1,250+ clients in more than 30 countries around the world b. ION Treasury meets the needs of organizations with varying complexities and at different stages of technology adoption We are the only corporate treasury provider with the ability to deliver on treasury's diverse and changing technology needs through: a. Commitment to continuous innovation b. Track record of successful delivery c. Financial strength with a multi-decade strategic view	New York, London, Sydney	40+ offices around the world

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Reval	2001	‣ T-Arc: a comprehensive data modeling, reporting and analytics solution ‣ Treasury Anywhere: a device agnostic treasury application allowing teams to access information from their ION TMS at any time, using any device they have on hand – mobile, tablet, laptop, PC ‣ iBAM: ION Bank Account Management, a tool that centralizes accounts, approvers, signatories and documentation; automating the management of bank account workflow, document generation and reporting	‣ English ‣ German ‣ Japanese (partial)

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Reval is the leading Software as a Service solution for enterprise treasury and risk management. It helps companies better manage cash, liquidity and financial risk, and account for and report on complex financial instruments and hedging activities. Reval is highly scalable, comprehensive and integrated with third parties, leveraging the power of its partner community to deliver a seamless user experience.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	N/A
What is the current version of your system, and what year was it released?	Our latest version of our SaaS application was released in April 2018. All clients are automatically on the latest version.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	Releases are scheduled on a semi-annual basis. Reval also conducts ten maintenance updates on an annual basis.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Two major releases and ten minor releases
On average how long does it take to upgrade?	Upgrades are applied over a weekend and are ready for customers by Sunday afternoon.
Please provide a list of functionality delivered as part of the core solution.	Please refer to our website for additional details about the functionality of our solution.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	N/A

ION Group – Treasura

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
ION Group is an industry leading provider of automation solutions and mission critical applications. We enable financial institutions, central banks and corporations to digitize and automate their most critical business processes. We are reinventing the way business is done through our innovations in automation technology. ION Treasury is the largest dedicated provider of treasury and risk management solutions in the world. ION promotes a multi-product strategy to best address different treasury customers' unique requirements: a. We have seven products and over 1,250+ clients in more than 30 countries around the world b. ION Treasury meets the needs of organizations with varying complexities and at different stages of technology adoption We are the only corporate treasury provider with the ability to deliver on treasury's diverse and changing technology needs through: a. Commitment to continuous innovation b. Track record of successful delivery c. Financial strength with a multi-decade strategic view	New York, London, Sydney	40+ offices around the world

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Treasura	2004	‣ T-Arc: a comprehensive data modeling, reporting and analytics solution ‣ Treasury Anywhere: a device agnostic treasury application allowing teams to access information from their ION TMS at any time, using any device they have on hand – mobile, tablet, laptop, PC ‣ iBAM: ION Bank Account Management, a tool that centralizes accounts, approvers, signatories and documentation; automating the management of bank account workflow, document generation and reporting	‣ English

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Treasura is a simple to use, Software as a Service treasury management system. It is ideal for companies that need a fast, efficient and cost-effective route off spreadsheets, bank portals or ineffective in-house systems. Treasura's strength is in North American cash management, payment processing, and short-term liquidity planning. It is affordable, easily implemented and continuously updated.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	N/A
What is the current version of your system, and what year was it released?	Our SaaS application is updated weekly. All clients are automatically on the latest version.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	Updates released bi-weekly. Patches weekly and automatically accepted by all clients.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Updates released bi-weekly. Patches weekly and automatically accepted by all clients. All major and minor features and bug fixes are included in the release cycle with features being deployed when tested and ready.
On average how long does it take to upgrade?	Upgrades are applied to all clients simultaneously in a weekly upgrade after business hours window. The window lasts several minutes in duration.
Please provide a list of functionality delivered as part of the core solution.	Please refer to our website for additional details about the functionality of our solution.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	N/A

ION Group – Wallstreet Suite

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
ION Group is an industry leading provider of automation solutions and mission critical applications. We enable financial institutions, central banks and corporations to digitize and automate their most critical business processes. We are reinventing the way business is done through our innovations in automation technology. ION Treasury is the largest dedicated provider of treasury and risk management solutions in the world. ION promotes a multi-product strategy to best address different treasury customers' unique requirements: a. We have seven products and over 1,250+ clients in more than 30 countries around the world b. ION Treasury meets the needs of organizations with varying complexities and at different stages of technology adoption We are the only corporate treasury provider with the ability to deliver on treasury's diverse and changing technology needs through: a. Commitment to continuous innovation b. Track record of successful delivery c. Financial strength with a multi-decade strategic view	New York, London, Sydney	40+ offices around the world

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Wallstreet Suite	1994	‣ T-Arc: a comprehensive data modeling, reporting and analytics solution ‣ Treasury Anywhere: a device agnostic treasury application allowing teams to access information from their ION TMS at any time, using any device they have on hand – mobile, tablet, laptop, PC ‣ iBAM: ION Bank Account Management, a tool that centralizes accounts, approvers, signatories and documentation; automating the management of bank account workflow, document generation and reporting	‣ English ‣ Dutch

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Wallstreet Suite is an enterprise Treasury and Risk Management solution designed for the world's largest and most complex organizations. It is a highly configurable and scalable solution, offering multi-entity support and real-time information across all asset classes. It also provides advanced analytics for business decision-making and key performance measurement. Wallstreet Suite professional services partners with corporate IT and business teams to improve and optimize global treasury operations.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	N/A
What is the current version of your system, and what year was it released?	Our latest version 7.4.60 was released in March 2018.
What is your development strategy (e.g., in-house vs. outsourced)?	100% in-house
Can you describe your release policy and frequency?	Releases are scheduled on a quarter to annual basis. Maintenance updates are scheduled periodically throughout the year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	2-4 major releases and periodic minor releases
On average how long does it take to upgrade?	Upgrade times depend on the complexity of the client, amount of users, and new features being utilized.
Please provide a list of functionality delivered as part of the core solution.	Please refer to our website for additional details about the functionality of our solution.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	N/A

Kyriba Corp.

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Kyriba began operations in Paris, France in 2000 as a spin off from XRT. The head office was relocated to the US in 2004. Kyriba is a private company with ownership primarily held by six financial and strategic investors. Jean-Luc Robert has been chairman and CEO of Kyriba since 2003.	New York, NY	‣ San Diego ‣ London ‣ Paris ‣ Amsterdam ‣ Tokyo ‣ Singapore ‣ Hong Kong ‣ Shanghai ‣ Dubai ‣ Rio de Janeiro

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Kyriba	2004	Kyriba also operates a full connectivity service bureau.	‣ English ‣ Cantonese ‣ French ‣ Japanese ‣ Mandarin ‣ Spanish

Section 2 — General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Kyriba delivers award-winning, secure, modular and scalable SaaS treasury solutions with integrated bank connectivity, payments, and risk management. The Treasury Cloud, powered by Kyriba, offers a suite of complete solutions for corporate treasury and finance: ‣ Cash & Liquidity ‣ Payments ‣ Supply Chain Finance ‣ Financial Transactions ‣ Risk Management
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Kyriba's implementation methodology relies on conducting a key requirements analysis and applying a risk-based scheduling approach to ensure that high-risk components of the project are completed as early as possible. Kyriba follows a train the trainer approach.
What is the current version of your system, and what year was it released?	17.2 (2017)
What is your development strategy (e.g., in-house vs. outsourced)?	In-House
Can you describe your release policy and frequency?	New releases are offered twice per year
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Two new releases per year, in addition to service releases which are more frequent.
On average how long does it take to upgrade?	Upgrades are managed by Kyriba and do not involve the user at all. Upgrades occur during a maintenance window on a non-business day in a period not exceeding 8 hours.
Please provide a list of functionality delivered as part of the core solution.	Kyriba offers over 30 modules across five product categories: ‣ Treasury Management ‣ Payments ‣ Supply Chain Finance ‣ Risk Management ‣ Control & Compliance For more detail, please refer to: http://www.kyriba.com/solutions/treasury-cloud
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	No
Please list the supported third party report writers.	Third party report writers are not required.

Message Communication Conseil S.A.S.

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
MCC Soft has been involved in the software development for financial system integration and Market Data since 1991. MCC Soft decided in 2009 to become a major leader in the Corporate Treasury Management System market, with the offering of a new product framework called Diapason. Diapason includes a rich Web communication portal, a true business process management workflow and on-demand online reporting, that perfectly fits with the ever-increasing demands of market transformation. Diapason leverages MCC experience in migrating legacy architectures and applications to state-of-the art solutions that facilitate its client business strategic development. Nowadays, Diapson is proudly powering some of the largest and most prestigious corporate treasury systems of worldwide corporation such as LVMH, Technip and Safran.	Paris, France	

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Diapason	2010	MCC can provide "Private Cloud" infrastructure (aka ASP)	‣ English ‣ French ‣ Mandarin

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Diapason is a global Treasury and Risk Management System (TRMS) for international Groups projects ‣ Implementation of a unique solution for the entire group (full-web solution, multi-languages, multi-currencies, multi-norms) ‣ Diapason provides full featured to global corporations (forecasts, cash management, Front to Back Office, accounting, Web portal and payment factory ‣ A large number of financial assets: Forex, money market, derivatives, securities, commodities
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Depending on project size and client wishes Diapason can be installed as a turnkey system thanks to its standard package approach. In this case project phases are: initial training, referential setup, data reload and final training & acceptance. For larger project (whole corporate scope), some dedicated configurations have to be set up leading to these phases: initial training, gap analysis, referential set up, specifications, diapason configuration, data reload, final training & acceptance.
What is the current version of your system, and what year was it released?	Diapason current version is 6.2 released in October 2015.
What is your development strategy (e.g., in-house vs. outsourced)?	Thanks to its experienced team, Diapason is fully developed and controlled by MCC.
Can you describe your release policy and frequency?	One major version a year. Two major versions supported.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Major versions are released once a year. Minor versions contain bug fixes and minor enhancement. Minor versions are released every quarter. It is not necessary to install every minor version. Depending on bug severity, it is not required to install a release to get a bug fix, but it is still the preferred method.
On average how long does it take to upgrade?	It ranges from 1 to 10 weeks depending on the implementation scope.
Please provide a list of functionality delivered as part of the core solution.	‣ Cash Management ‣ Liquidity Planning ‣ Multilateral Netting ‣ Forex ‣ Forex Option ‣ Interests Rates ‣ Commodities/Energy ‣ Loans & Deposits ‣ Equity ‣ Bond Issue ‣ Risk Management ‣ Limit Management ‣ Trade Finance ‣ Collateral Management ‣ T3XX Reconciliation ‣ Emir ‣ Multi-norm Accounting ‣ Accounting Reconciliation ‣ Market Data & FXAll or 360T Connectors ‣ Payment Factory ‣ Bank Account Management
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	Thanks to its DataBridge module, Diapason can easily integrate within its environment. DataBridge includes ETL (mapping, transformation, native support for CSV, XML, flat file) and connectivity features (sFTPs, FxAll, 360T, EBICs, Swift, JMS).
Please list the supported third party report writers.	Birt

Misys

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Misys is a privately owned by the private equity firm, Vista Equity Partners, since 2012. The company was established in 1979, and employs over 4,700 staff in more than 50 countries.	London, UK	‣ We have regional office in over 50 countries or markets including Australia, Austria, Bahrain, Belgium, Brazil, Bulgaria, Canada, Chile, China (Mainland), Colombia, Czech Republic, Denmark, Egypt, France, Germany, Greece, Hong Kong SAR, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Kenya, Korea, Luxembourg, Malaysia, Mexico, Morocco, Netherlands, Nigeria, Norway, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, Slovakia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, UK, United Arab Emirates, USA, Vietnam.

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
FusionCorporate KTP		Misys is at the forefront of the financial software industry, providing the broadest portfolio of banking, capital markets, investment management and risk management solutions available on the market. Our team of domain experts, combined with our partner eco-system, has an unparalleled ability to address industry requirements at both a global and local level. We connect systems, collect data and create intelligent information to drive smarter business decisions. Our solutions are available through a traditional "on-premise" model, as well as via hosted alternatives including, but not limited to, managed, managed-hosted, and subscription.	‣ English ‣ French

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Cash management – The solution provides the real-time position keeping and consolidated reporting that is crucial to financial decision making. With the ability to drill-down into cash flows you can proactively handle internal current account management, including cash pooling and zero balancing. Liquidity management – Manage all stages of periodic or depreciable bullet loans, lending or borrowing lines of credit, money market funds, shares and negotiable debt securities/bonds. ‣ Debt management – In addition to short-term financing, FusionCorporate KTP provides certificates of deposit and traded bonds used for debt management, via the issuing of treasury notes and commercial papers. Risk management module- Comprehensive risk management is available for a wide range of financial instruments, enabling detailed simulation and stress testing, powerful calculations and forecasting that incorporates market data, curves and volatilities. Cross-asset scenario analysis or P&L analysis is available in an integrated dynamic reporting environment. ‣ Dynamic dashboards and premium reporting – FusionCorporate KTP offers a modern, flexible approach to global reporting, with dynamic dashboards and "smart views". Customizable, business oriented views can be designed to deliver the data needed by different users. You can combine historical logs such as transactions, payments and accounting to reduce the number of reports you need. A dynamic reporting environment enables you to create reports on the fly and add to the library of reports that already exist to monitor workflows and banking statistics, or analyze P&Ls across business entities including investment performance, net financial debt and so on. ‣ Hedging and accounting – With a complete financial sub-ledger that's easy to integrate with most ERPs, the solution allows for journal entries and trial balances for all treasury activities around the globe to be generated automatically. The system provides multiple charts of accounts and full support for hedge accounting and IAS 39 & FAS133/138 compliance. Hedging transactions can be processed and hedging relationships established irrespective of the underlying instruments. This approach meets IFRS standards for effectiveness testing and accounting. ‣ Web portal – With a collaborative approach across the global business, the system can fully manage budgets and liquidity for total in-house banking and calculate banking fees for complete intra-group corporate cash management. The in-house banking portal provides the tools to perform cross subsidiary currency hedging, multi-lateral netting, subsidiary financing and transaction processing.

Misys

Section 2 – General system and solution information (continued)

EY questions	Vendor responses
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Misys has built its own unique methodology named TOPPs, capitalizing on experience acquired during thousands of successful projects and based on PMP and Prince2 principles. This methodology applies for any deployment or upgrade project within Misys. Project delivery would follow five waterfall stages with defined exit/entry gates. Sets of activities within a phase could be carried out either sequentially or in parallel. The five stages that make up the project lifecycle are: ‣ Initiate – Ensure pre-requisites are in place, assemble the project team, set up the technical infrastructure and install the software ‣ Define – Train the project team, understand and document client functional and technical requirements ‣ Build – Configure the system and develop technical components as per client requirements, test the setup; plan for Data conversion ‣ Test – Assist the client in SIT/UAT and Conversion rehearsals ‣ Close – Transfer the system to the client; provide support for go live and post live activities; handover to the CS team
What is the current version of your system, and what year was it released?	Version 6.4 released in January 2016.
What is your development strategy (e.g., in-house vs. outsourced)?	In-house
Can you describe your release policy and frequency?	Major release every 12-24 months Minor release every 6-12 months Service Pack every 1-6 Months Hot fix/Patch on needs basis
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Major release every 12-24 months Minor release every 6-12 months Service Pack every 1-6 Months Hot fix/Patch on needs basis
On average how long does it take to upgrade?	Upgrade projects take from one to three months including UAT.

Section 2 – General system and solution information (continued)

EY questions	Vendor responses
Please provide a list of functionality delivered as part of the core solution.	‣ Kernel – One single database for all modules; Unique referential of static data; Straight Through Processing; Complete integration of all functions (cash, market deals, accounting); Security & Audit Trail. ‣ Cash Management – Cash Position & Cash Forecasting; Cash concentration (ZBA, Notional, Automatic Transfers generation); Reconciliation facilities; In house Banking; Banking Fees Calculation, reconciliation and Simulation. ‣ Market – Large set of instruments; Front-Office facilities (Simulation, Dealing); Back-Office facilities (Confirmation, SSI, Payments); Middle-Office facilities (Risk & Performance analysis, Standard and Reportings); Accounting (Integrated accounting engine with automatic generation of journal entries, interface ready with the most popular ERPs: SAP, Oracle, JD Edward..., clean cut-off and period management processes); IFRS (full support for Hedge accounting and IAS39 compliance, prospective & retrospective testing). ‣ Web Portal module – Web secured deployment intercompany activity & dealing; Submission of all subsidiaries cash forecasts and funding needs ‣ E-Payment Factory – Swift Ready certification for Corporates; Flexible Workflow management; Complete Integration with the cash position and with the confirmation/payment processing of KTP Core ‣ Misys Board – Dynamic reporting; Managerial, Decisional and Monitoring dashboards; Intuitive user friendly form builder ‣ KTP Risk – Debt analysis and simulation (Position and P/L); Market data stress and scenarios maker.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	FusionCorporate KTP offers standard interfaces and middleware adapters which allow for a highly sophisticated, guaranteed connectivity to any third party or in-house system. The communication to or from any module of KTP is possible in real-time (via the middleware adapter) or batch mode (via the import/export interfaces) in a predefined and documented way. The supported formats include ASCII, SQL statements, Spreadsheets, HTML, XML. Industry standard business process management is part of our offering and we can provide a standard module that handles communication with custodians like Euro clear, CEDEL and Clearstream via SWIFT securities messages.
Please list the supported third party report writers.	

Orbit Treasury Solutions, Inc.

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Orbit has been in continual use by fortune 500 companies since its inception in 1999. Initially, Orbit deliberately followed a controlled growth module adding select clients to the system. During this period, Orbit expanded its operational & support capabilities in anticipation of a formal national launch in. Orbit is privately owned.	San Francisco Bay Area	The Chicago & NY area

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Orbit	1999	Orbit hosts the backend.	English

Section 2 — General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Powerful tools to meet the demands on treasury enabling clients to exceed expectations with existing resources. ‣ Interactive dashboards create an innovative workflow that expedites and simplifies the operational workflow. ‣ Controls and audit reports coupled by our ability to house your sensitive data behind your corporate firewall. ‣ Applications are SaaS based yet highly customizable, providing each client with a unique solution.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Applications are hosted SaaS. Implementation of other system components are via two small files locally loaded. The files load in seconds and control messaging and system configuration. Implementation consists of; loading static data, completion of interfaces, user training and building worksheets and reports. Orbit completes the above work. The work is defined and agreed via completion of implementation, solution and static data plans. Training is conducted on site.
What is the current version of your system, and what year was it released?	Version W7 released in 2016
What is your development strategy (e.g., in-house vs. outsourced)?	Orbit primarily relies on our in-house development resources.
Can you describe your release policy and frequency?	Orbit is unique in that we are a blended SaaS solution. As new functionality is developed this is communicated to the base along with release notes. Clients can opt in or out of the new functionality based on their needs. At present there is no need for a formal policy related to new version release dates. The latest release incorporates the new UI and innovative interactive dashboards. We will continue to add features to this version as determined by the base.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Due to our unique blended solution, we do not follow a defined release schedule. Clients are not obligated to participate in any release unless they are to address a regulatory issue or fix is to address a noted problem.
On average how long does it take to upgrade?	Varies significantly, from a day or two to weeks or months depending on the enhancements.
Please provide a list of functionality delivered as part of the core solution.	Orbit includes robust TMS functionality. Our cash module includes automated bank polling, transaction reconciliation and accounting, forecasting, cash positioning and payments. Orbit's FX module is an end-to-end solution, beginning with FX exposure forecasting and ends with our highly automated settlements tool. BAM enables clients to manage all bank data, track signatory change workflow and produce management reports (including FBAR). We also have a robust investment and debt module.
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	Orbit is fully self-contained and provides all the software required.
Please list the supported third party report writers.	Jasper reports

PITECO S.p.A.

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
PITECO born in 1980 and now is a part of DEDAGROUP ICT NETWORK. The Group has a consolidated turnover of approximately 200 million with offices in Italy, France, USA, Mexico and the United Arab Emirates and is controlled by a holding company with a turnover of approximately € 2 Billion. Since July 31st 2015, Piteco is listed on AIM Italian market.	Milan, Italy	‣ Milan ‣ Padua ‣ Rome

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Piteco Evolution	1980	N/A	‣ English ‣ Italian

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Treasury and Cash management system ‣ Financial Planning ‣ Payment Factory ‣ Integration with Banks ‣ Integration with ERP
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	We have four project phases: analysis, setup and test, delivery and go-live, follow up. During each phase key users are trained on the job, other users with a specific training session.
What is the current version of your system, and what year was it released?	4.02.64 2016
What is your development strategy (e.g., in-house vs. outsourced)?	In-house
Can you describe your release policy and frequency?	Every six months we complete a new release, it is not necessary for customers to constantly update Piteco release.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	We schedule two major releases per year, bug fixing does not required a new release.
On average how long does it take to upgrade?	It is determined by different factors: numbers of module and users, quantity of customizations; installation requires 1 day but you have to plan release test activities.
Please provide a list of functionality delivered as part of the core solution.	‣ Cash management ‣ Funding and investments ‣ Payment and collection ‣ Cash flow management ‣ Connection with bank systems ‣ Integration with accounting systems ‣ Bank account reconciliation ‣ Budget and forecast
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	System does not require middleware for integration.
Please list the supported third party report writers.	QLIKVIEW and DEV EXPRESS reporting tool.

Salmon Software Limited

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Founded in 1985, Salmon Software Limited is a company specializing exclusively in the Treasury Management Systems market. With almost 30 years of experience to our name, we have developed vast expertise in the development, marketing and support of software solutions for Corporate Treasurers. Shareholders are 4 sole private investors.	Dublin, Ireland	‣ Czech Republic ‣ UK ‣ Netherlands

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Salmon Treasurer	1985	N/A	‣ English ‣ Cantonese ‣ Dutch ‣ French ‣ German ‣ Greek ‣ Hindi ‣ Mandarin ‣ Slovak ‣ Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Salmon Treasurer is an elite TMS providing all necessary functionality for the requirements of the modern day treasury, front, middle and back offices, including extensive integration with third party systems ranging from dealing platforms and market data providers to ERPs and risk systems.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	We have a well-tested implementation methodology which include several tasks and milestones. These tasks take place in phases and many are carried out in parallel.
What is the current version of your system, and what year was it released?	v4.0, released early 2016
What is your development strategy (e.g., in-house vs. outsourced)?	In-house
Can you describe your release policy and frequency?	Salmon Software aims to make a major release every five years and interim releases each year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Salmon Software aims to make a major release every five years and interim releases each year.
On average how long does it take to upgrade?	It typically takes one day of professional services to achieve an upgrade with the client undertaking UAT tasks.
Please provide a list of functionality delivered as part of the core solution.	N/A
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	Multiple formats and protocols, dual authorization, encryption, both for treasury payments and AP from the ERP or any other third party system.

SAP SE

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
In 1972, five entrepreneurs in Germany had a vision for the business potential of technology and founded SAP. In August 1988, SAP GmbH became SAP AG, and public trading started on 4 November 1988. Shares were listed on the Frankfurt and Stuttgart stock exchanges. In 1995, SAP was included in the German stock index DAX and, on 22 September 2003, SAP was included in the Dow Jones STOXX 50. The company's official name became SAP AG (a public limited company) after the 2005 annual general meeting. In 2014, SAP changed from an AG to a European Company (Societas Europaea or SE). Today, as the market leader in enterprise application software, SAP is at the center of today's business and technology revolution. SAP has a comprehensive suite of solutions for treasury management, which helps businesses gain greater insight and control over complex processes for managing cash, liquidity, and risk while integrating financial reporting with SAP software. By simplifying working capital, risk management, and compliance, treasury managers can gain complete transparency into and control over interrelated activities and automate critical processes. SAP innovations help 320,000 customers worldwide work together more efficiently and use business insight more effectively. For more information, visit www.sap.com.	Walldorf, Germany	SAP has a presence in more than 130 countries worldwide, please visit www.sap.com for further details.

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
SAP Treasury and Risk Management (including SAP Cash Management powered by HANA, SAP Treasury and Financial Risk Management as well as SAP In-house-Cash)	The first version of the system including basic functionalities in the area of Cash Management is more than 25 years old. Further capabilities in the area of Treasury and Risk Management have been introduced in the 1990s, in-house-bank capabilities were added in 2004 and finally electronic bank communication was launched in 2007.	SAP Treasury and Risk Management is part of the SAP ERP solution portfolio and can be activated once licensed. In order to deploy the Treasury solution some platform capabilities need to be activated as well (e.g., SAP HANA platform, SAP Netweaver Process Orchestration). The technical infrastructure can have various deployment options, either on premise, private cloud and in parts even in public cloud.	Usually we support our customers in their local languages but this depends on the relevant customer contract. Very high priority tickets are supported in English only.

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	Our product covers the complete value chain from payment, cash and treasury operations through comprehensive risk management. The native integration into SAP Financials offers the unique possibility to do proper working capital management and unify payment processes for all sites and subsidiaries around the world. Major capabilities include: ‣ Payments and Bank Communication ‣ Cash, Liquidity and Bank Account Management ‣ Debt and Investment Management ‣ Financial Risk Management
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Usually implementation is done via a separate implementation project, which could be done internally or via SAP Services or an external implementation partner. For Treasury and Risk Management as well as Payments and Bank Communications (including In-house-Cash, but excluding SAP Cash Management) SAP offers an RDS approach (i.e. Rapid-Deployment-Solution), which supports key treasury processes by implementing a preconfigured set of solutions based on best practices at a fixed price.
What is the current version of your system, and what year was it released?	The current version of our Treasury applications is based on the latest release of SAP S4 HANA ~~Finance~~. Latest version (16~~05~~) was released in ~~May 2016~~.
What is your development strategy (e.g., in-house vs. outsourced)?	Usually SAP software is developed out of SAP Labs, where applicable partnerships are being established in order to complement our solution and service offerings.
Can you describe your release policy and frequency?	On premise it is currently planned to have yearly releases with semi-annual feature-packs (updates). In the Cloud we plan to have quarterly update releases.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	On premise it is currently planned to have yearly releases with semi-annual feature-packs (updates). In the Cloud we plan to have quarterly update releases.
On average how long does it take to upgrade?	Can't be specified.
Please provide a list of functionality delivered as part of the core solution.	‣ Payment Operations, Workflow and Signatures, Monitoring and Status Tracking, Payment Factory/In-house-Banking, Bank and SWIFT connectivity ‣ Electronic Bank Statements, Cash Position and Analysis, Liquidity Management, Bank Account Management ‣ Deal Capture, Risk Controlling, Correspondence & Settlement, Accounting ‣ Risk Identification, Risk Quantification, Risk Analysis, Risk Management & Hedge Accounting
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	In order to establish bank connectivity or to automatically import market data, the system would require SAP NetWeaver PI/PO as Middleware, for integration into SAP Accounting no additional middleware would be required.
Please list the supported third party report writers.	There are different tools to be used like Lumira, Design Studio, and others.

softcash ag

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
softcash ag is a company founded in March 1988 Swiss computer financial services company based in CH-8834 Schindellegi SZ (District of the municipality Feusisberg SZ). The company is privately owned by Jules J. Späni. softcash ag has been implemented over 300 of the largest and most prestigious Swiss and German companies to introduce and cared in the daily use of the Treasury program magnet.	Schindellegi, Switzerland	Perth, Australia

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
magnet	Web-based: 2006	‣ A/R Match Interface ‣ General ledger Interface ‣ Netting module	‣ English ‣ German

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Magnet of softcash ag is a practitioner software. ‣ As a web-based system, Magnet can be used across regions without local installations. ‣ Different languages and country versions take international aspects into account and the system can be scaled for small, medium and large companies. ‣ "Easy-to-use" is not just a slogan – users appreciate this
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	The implementation approach is based on four phases: 1. Target state analysis 2. Definition of the structure and processes in the target state 3. Organizational and operational clarifications and definitions 4. Customizing of the system based on the day-to-to day operations and educations of client
What is the current version of your system, and what year was it released?	Rel. 4.2.7, 2016
What is your development strategy (e.g., in-house vs. outsourced)?	In general in-house, if needed project work is outsourced.
Can you describe your release policy and frequency?	Major releases with software improvements occur every quarter. Minor updates with corrections occur about every three to four weeks.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Major releases with software improvements occur every quarter. Minor updates with corrections occur about every three to four weeks.
On average how long does it take to upgrade?	Installation takes about one hour.
Please provide a list of functionality delivered as part of the core solution.	The Treasury module has the following functionalities: ‣ Cash management ‣ Liquidity management ‣ FX module (incl. interface to 360T) ‣ Money Market (incl. interface 360T) ‣ Loan module ‣ Interest rate derivatives ‣ General ledger interface ‣ Accounts receivable (incl. reconciliation) ‣ Netting module ‣ Liquidity planning
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	No, not needed
Please list the supported third party report writers.	N/A

Treasury Curve

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Treasury Curve was founded in 2006. Built by treasury experts, for treasury experts. Unlike our competitors we are a regulated financial institution and have obtained a category 1 SWIFT membership. We are also partners with Microsoft as their only TMS provider and take full advantage of being integrated with Office 365, hosted on the Microsoft cloud and integrated with Microsoft's Power BI. Proud to be private and profitable.	Silicon Valley, CA, USA	‣ California ‣ Washington ‣ Illinois ‣ Minnesota ‣ Florida ‣ Delaware

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Cash Management App and Investment App	2006	Unlike typical TMS products on the market, Treasury Curve is 100% focused on treasury and treasury related business lines like cash management and investments.	‣ English ‣ Hindi

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	‣ Visibility of balances, statements and transaction details, across all of your bank accounts, on a single screen. ‣ Compliance Management. ‣ Forecasting of cash flows, plus the ability to move money and reconcile. ‣ Payments Factory including ERP integration and automatic reconciliation. ‣ Investment Management – Visibility, Trading and Compliance Management.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Treasury Curve has a documented Onboarding process. We provide you with a list of requirements (banks, account numbers, business entities, user list, etc.) and once the information is gathered, Treasury Curve does all of the initial system setup. This process can be done in as little as a day. We can have you up and running within weeks vs. months or quarters with an installed system.
What is the current version of your system, and what year was it released?	Unlike a traditional installed TMS that may have several versions of software, we are a cloud-based solution and have one version that is supported and is frequently updated.
What is your development strategy (e.g., in-house vs. outsourced)?	In-house.
Can you describe your release policy and frequency?	Typically, we release once per quarter. We are constantly adding new functionality. Given that we are a cloud-based solution, new functionality does not need to be installed. You have the option to turn on the new functionality if you want to take advantage of it.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Typically, we release once per quarter. We are constantly adding new functionality. Given that we are a cloud-based solution, new functionality does not need to be installed. You have the option to turn on the new functionality if you want to take advantage of it.
On average how long does it take to upgrade?	As discussed above, given that we are a cloud-base solution, we are constantly adding new functionality, so there is no upgrades per se. If you choose to use the new functionality, its just a matter of checking a box.
Please provide a list of functionality delivered as part of the core solution.	‣ Money Fund Portal/Investments ‣ Cash Management – Visibility ‣ Forecasting ‣ Payment Factory ‣ Compliance Manager
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	The middleware is part of our product bundling per SaaS.
Please list the supported third party report writers.	N/A

Treasury Services

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Treasury Services was founded in 2002 by Jan Vermeer. In 2009, Treasury Services merged with TreasuryMetrics. Currently Treasury Services has three partners.	Turnhout, Belgium	

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
TreasuryMetrics	2010	‣ Treasury training & Education ‣ Financial Engineering Library ‣ Treasury Consulting Services	‣ English ‣ Dutch ‣ French ‣ German ‣ Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	TreasuryMetrics supports: ‣ Cash Management ‣ Risk Management ‣ Corporate Finance ‣ In-House-Banking and ‣ Treasury Control
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	The implementation is between 15 and 20 days. There will be a functional implementation manager and a technical implementation manager. Together with the client we will go through our detailed plan to determine what needs to be implemented, by whom and by when.
What is the current version of your system, and what year was it released?	3.10.6.2 Released in May 2016.
What is your development strategy (e.g., in-house vs. outsourced)?	In-House development
Can you describe your release policy and frequency?	The policy is minimum one release per year. However, in practice we issue about four releases per year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Practically, four releases per year. A release contains new functionality and/or new technology. Bug fixes are packed in patches.
On average how long does it take to upgrade?	One day
Please provide a list of functionality delivered as part of the core solution.	‣ Risk management ‣ Cash management ‣ In-house-banking ‣ Corporate finance ‣ Treasury control
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	QlikView, Crystal Reports, Report Builder are the ones we know.

TreasuryXpress, Inc.

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
TreasuryXpress, Inc. (formerly Box Automation Solutions) was founded by Anish Rahal in 2008. Headquartered in Paris, the firm's first client was Automatic Data Processing (ADP) who used TreasuryXpress' TMS solution, C2Treasury (formerly C2Box) for cash visibility. Since then, the company has expanded organically and opened its Dubai office in 2011. To support the growing needs and interest for TreasuryXpress' solutions, the company expanded its global presence and opened its North American headquarters in New York in October 2015. In 2016, TreasuryXpress expanded its product portfolio. We have over 280 clients globally with a retention rate of 98.5%. TreassuryXpress is backed by MEVP.	Paris, France	‣ New York ‣ Dubai ‣ Beirut ‣ Paris ‣ London

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
C2Treasury and C2Treasury_Lite	2008	‣ TreasuryXpress Lab: Forecast+ ‣ Additional Lab Products coming soon: Wallet+, Portfolio+	‣ English ‣ Arabic ‣ French ‣ Portuguese ‣ Spanish

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	At TreasuryXpress, we offer Enterprise-level Treasury Management that is affordable to all. Our solution helps treasurers achieve 100% bank visibility, create accurate cash flow forecasts, manage financial risk and derivatives accounting, manage end-to-end payment processing, and distribute useful reports to all internal stakeholders automatically and efficiently: ▸ Treasury Operations Optimization ▸ Cash Management, Visibility and Bank Connectivity ▸ Liquidity and Working Capital Management ▸ Payment Security and Workflow Management ▸ Self-Service Custom Reporting
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	At TreasuryXpress, our approach ensures a frictionless implementation experience for our clients – one that consumes minimal client resources. Implementation starts upon contract signing, when a dedicated Project Manager assigned. Their role is to prepare and execute a full implementation and training plan. We also assign an IT Manager who provides full technical support to the client. Additionally, we leverage our dedicated Bank Connectivity Team during the implementation project, which really optimizes and accelerates the process for our clients. Our solution is designed for ease of implementation, ease of integration, ease of use. Therefore, each implementation is quickly delivered and turnkey.
What is the current version of your system, and what year was it released?	We released the first version of our C2Treasury TMS solution in 2008 and we are currently on version 8.8.
What is your development strategy (e.g., in-house vs. outsourced)?	In-house
Can you describe your release policy and frequency?	60% of our product releases are Client Driven. We push major releases 12 times a year and minor releases 52 times a year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Major/strategic functionality: monthly (12) Maintenance: weekly (52)
On average how long does it take to upgrade?	As a flexible, on-demand Cloud treasury solution provider, we offer multiple deployment methods so that our clients can install, access, and upgrade according to their internal technology culture requirements. Below are the maximum upgrade times. ▸ On premise clients, it takes = 1 day/7 hours ▸ ASP/single-tenant = 1 day/7 hours ▸ Multi-tenant = Instantly ▸ Direct-to-private-cloud = 1 day/7 hours All clients requiring upgrades are able to do so quickly and easily through our web services.
Please provide a list of functionality delivered as part of the core solution.	N/A
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	No, not required.
Please list the supported third party report writers.	We can support and integrate with any 3rd party report writer.

TRINITY Management Systems GmbH

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Founded in 1998/ founders: Nicolas Bronke and Henning von Tresckow/ still owned by founders; since more than 15 year we develop easy to use standard software to streamline key processes in corporate treasury. This include all areas like Cash Management, Cash Flow Forecast, Transaction Management, FX-/Interest Risk Management, Trade Finance, Payment Factory, Treasurer-/CFO Reporting.	Frankfurt am Main, Germany	‣ Netherlands ‣ Poland ‣ Malta ‣ U.A.E.

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
TRINITY TMS	1998	Hosting Service	‣ English ‣ Czech ‣ Dutch ‣ German ‣ Polish ‣ Russian ‣ Swedish ‣ Ukrainian

Section 2 – General system and solution information

EY questions	Vendor responses
In five bullets or less, please provide a brief description of your product.	The TRINITY TMS is a web-based out of the box application, specialized to streamline main processes in corporate treasury; the TRINITY TMS is easy to use and easy to implement. The usage can be organized on premise or in the cloud.
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	TRINITY follows a standard implementation plan with defined milestones. A standard implementation takes about 15 man days. This includes support services like installation, training, support in setting up standard interfaces, implementation of a cash low forecast module etc.).
What is the current version of your system, and what year was it released?	Version: 5.3.2.8; Year: release: 2016.
What is your development strategy (e.g., in-house vs. outsourced)?	TRINITY offers both strategies: usage in the cloud and on premise.
Can you describe your release policy and frequency?	TRINITY offers for on premise clients: one new release/year and for the cloud version: four new releases per year.
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	TRINITY delivers between two and four releases per year. This does not include patches for bug fixing.
On average how long does it take to upgrade?	0.5 days
Please provide a list of functionality delivered as part of the core solution.	‣ Cash management ‣ Cash flow forecast ‣ Financial deal management ‣ FX-/Interest risk management ‣ Payment factory ‣ Trade finance ‣ Netting ‣ CFO reporting
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	N/A
Please list the supported third party report writers.	Jaspersoft

Visual Risk

Section 1 – General information

Company information

Company history	Headquarters location	Other representative offices (if applicable)
Visual Risk was founded in 2001 by Richard Hughes and Paul Nailand, and is headquartered in Sydney. They currently serve as managing directors of the company. Visual Risk has expanded to serve the Asia-Pacific and European regions. The company is privately owned by senior management and the company is debt free.	Sydney, Australia	‣ London ‣ UK

System information

System name (product)	Year the first version of system launched	Non-core (TMS) value added products and services (e.g., hosting services, middleware solutions)	Languages of support
Visual Risk	2001	‣ Hosting services ‣ Market Data ‣ Hedge Accounting	‣ English ‣ Mandarin ‣ Visual Risk is architected to support multiple languages including double byte

Section 2 – General system and solution information

EY questions	Vendor responses	
In five bullets or less, please provide a brief description of your product.	Visual Risk provides an end-to-end treasury and risk management platform for midsized corporate and bank treasuries, in addition to specialist risk analytics and valuation/hedge accounting for the top tier.	
In 100 words or less, please describe your implementation approach and methodology (e.g., project phases, train the trainer, turnkey)?	Visual Risk uses an industry standard eight-stage project delivery methodology. This leverages POC's in the scoping phase to identify requirements and drive stakeholder buy-in. Training can be delivered using workshop, one-to-one, train-the-trainer and remote methods based on customer preference and budget.	
What is the current version of your system, and what year was it released?	Visual Risk ~~16.1.3,~~ 2016.	
What is your development strategy (e.g., in-house vs. outsourced)?	In-house, this ensures that the product user interface and workflows are consistent and enhances support. No products are acquired and bolted on to avoid integration issues.	
Can you describe your release policy and frequency?	Visual Risk makes three releases per year, which are included in the annual subscription fee.	
How many releases are scheduled per year? Please distinguish between major (functionality) and minor releases. Do all (minor) bug fixes require a new release?	Three major releases per year.	
On average how long does it take to upgrade?	Deployment of releases is very fast, on average two to three weeks if UAT is carried out. This can be carried out based on user discretion.	
Please provide a list of functionality delivered as part of the core solution.	**Corporates:** ‣ Treasury and Cash Management ‣ Risk Analytics and Reporting (CFaR, VaR, Stress Testing, What-if) ‣ Hedge Accounting & Compliance (IAS 39, IFRS 9, IFRS 7, IFRS 13)	**Financial institutions:** ‣ Treasury & Cash Management ‣ Asset Liability Management (NII/NIM, NPV, BPS, What-if) ‣ Hedge Accounting & Compliance (IAS 39, IFRS 9 IFRS 7, IFRS 13) ‣ Liquidity Risk Management (Basel III LCR, MLH)
Please specify whether your system requires either internal or external middleware for integration (file manipulation into a readable system format).	Visual Risk uses a built in import/export engine as well as a job scheduling service to automate integration. For hosted clients, complex integration tasks may also be configured using our Visual Cron automation services.	
Please list the supported third party report writers.	Export possible of all images and data to other windows applications.	

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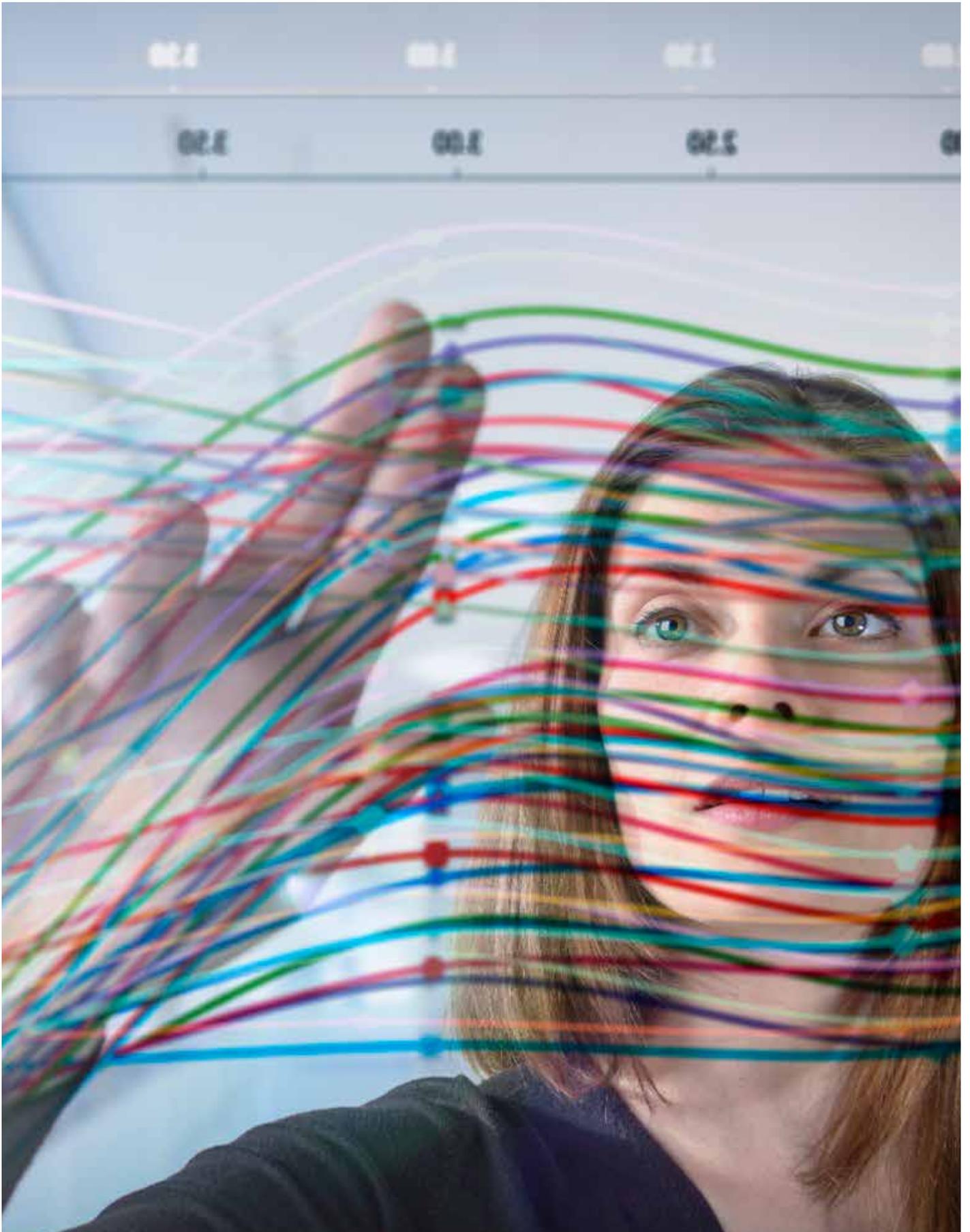Roger Disch
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