



Treasury Management Systems Overview

2010 Edition



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Ernst & Young is defined on page 62

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Preface

Treasurers are facing turbulent and challenging times. The global financial crisis has caused treasury to re-focus on closely monitoring the financial markets, optimizing cash flow and managing risk management as its top priorities. Considering the speed of the developments, a comprehensive and real-time treasury management system is essential to pro-actively manage financial positions and risks.

Treasury management has become more automated through improved Straight-Through-Processing (STP) and further integration with corporate financial systems. This decreases the required number of manual activities and makes the process more efficient and - if the system is implemented adequately - more secure. Ideally, this automation frees time for treasury teams to focus on areas where the greatest value can be added.

This increased focus on automation puts the treasury management system at the heart of the organization. The requirements placed on the system in terms of functionality, process transparency and security become higher each year. Given the critical functionality provided, companies need to fully rely on the system and the support provided by the vendor, which should be evaluated on a regular basis just as other key relationships are.

This booklet presents an overview of the main functional specifications of the leading treasury management systems used for corporate treasury management. The system capabilities and vendor information are based on information supplied by the respondents of an extensive questionnaire prepared by Ernst & Young Treasury Services. Additional information is available from Ernst & Young Treasury Services, which provides treasury advisory services to assist companies with the selection and implementation of treasury management systems.

We hope that this overview will provide you with a solid initial indication of what you may expect from a comprehensive treasury management system.

Ernst & Young,



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Chapter 1: differentiators for treasury management systems

The recent economic turmoil has re-focused treasury departments from crisis management back to the task of efficiently managing activities and raises the question of what lessons can be learned and what opportunities can be leveraged from enhancing the organizations access to information through the improved treasury management systems. How can the organization better employ technology to gain access to vital real-time information? For example, a finely implemented system will provide strong and automated functionality through automated payment solutions, real-time balance information, automated reconciliations and confirmations. It can also provide strong analytical tools to effectively measure and monitor financial risk positions in a volatile market and execute hedging of exposures to amiable pricing. It may also offer the functionality to manage your liquidity positions through integrating cash forecasts (with careful input), balancing of foreign currency cash accounts, managing collateral, controlling banking authorities, monitoring credit, as well as enhancing the control environment.

However, not all functionality is implemented in a smooth manner. In the previous edition of this *Treasury Management Systems Overview*, we talked about the consolidation trend in the market for system vendors. The emphasis in the market seems to have shifted to replacing technology that treasury has “outgrown,” was implemented with limited functional scope, replaced because of a “forced retirement” of the vendor’s solution or as a result of recent treasury integration. Although the fragmentation of the treasury system market has been reduced, treasurers still struggle with the choice of selecting a system that offers the required visibility and speed of management information while having the robustness for core treasury functionality. The key question for treasurers is two-fold: “What can I give up and what can I gain?” and “How do I differentiate among the systems offered?”

With companies seeking a single, integrated, system solution for the bulk of their treasury activities, how does a treasury identify and evaluate the systems available and translate this information into a comprehensive vision on which system or systems might best meet their needs - for the least amount of cost - today and tomorrow?

While technological developments within the treasury landscape have been evolving, with a relatively stable state of providers, the focus has been in offering solutions tailored to the needs of treasury departments. Although cost containment and improving profit margins is always top of mind and is ever more so this year, we are observing a slight increase in initiatives to support technology improvements to achieve cost savings, particularly in industries where there is uncertainty regarding reform or regulation and those associated costs. As such, a “single-system solution” that either is or has the potential to be fully integrated with the banking, trading or other portals (e.g., SWIFT), and ERP systems has become paramount to achieving these cost reductions. This “wall-to-wall” approach on system selection is continuing to be popular as companies try to save costs on interface support and system licenses for a more efficient and visible financial value chain management.



Drivers in choosing a Treasury Management System (TMS)

What are the main drivers in choosing a TMS? Is it the ability to effectively manage and monitor your trading risks in real time using a variety of complex instruments, or the ability to strengthen and improve cash management, cash visibility and access, and cash flow forecasting tools and processes. Or is it the ability to interface with the ERP and generate automated payments? What should you consider in a TMS in order to make a sound choice between the most popular systems on the market at the moment and the system that might best fit your needs? We believe there are several key drivers in evaluating your choices:

- ▶ Identifying and prioritizing the needs for business critical treasury activities
- ▶ Identifying and evaluating solutions that can adapt to a changing business environment
- ▶ Identifying and evaluating costs and benefits associated with integration
- ▶ Assessing the software delivery model that best meets your functional and economic needs
- ▶ Assessing the system vendor and developing that relationship before, during and after implementation to best serve your needs

Identifying critical business requirements

Core functionality must always include a system that accurately captures and monitors all required instrument types, provides access and visibility to cash flows, supports segregation of duties and enforces controls, makes confirmations, reconciliations and executing hedges and payments as automated as possible, has a user friendly and flexible report writer and supports interfaces to other systems. But what else can a strongly implemented system provide? How well does your existing system/processes calculate and continuously provide accurate valuations and real-time management information?

Recent events have now called for systems that can also provide useful real-time information to better control working capital levels, have visibility on global cash balances and have the scope to robustly identify core, liquid and strategic levels of funding and liquidity. Every treasury function operates in a different risk environment and treasurers face a multitude of differing business drivers. With this in mind, the real differentiators for a TMS will center on how a TMS package comprehensively covers your business requirements, and mainly its ability to adapt to the specific business or industry needs of the company. However, should the system not meet the majority of the business requirements, should a company consider customization or implementing the application in a manner for which the system was not intended? If yes, then what level of "customization" is appropriate and how can this be supported going forward? Will the customization be too rigid to support new functionality as a company's needs and focus change? What is the risk that the vendor will eventually decline to support these customizations or "unintended" uses?

Solutions to meet a changing business environment

What functionality do you require from a treasury management system today, how deep is your Treasury footprint within the business and what functionality are you likely to require in the medium term? There is no doubt that cash has been firmly ensconced onto its throne and a back to basics approach has been adopted; for example, cash management and forecasting, covenant management and monitoring and supporting local funding solutions have all been revisited, expanded or further embedded.

With the right system selection and implementation, various assumptions around commercial and economic environments may be flexed and analyzed to provide further insight into how the balance sheet value can change.

Further advances are being made by treasurers towards more effective liquidity planning and management or, in essence, expanding the cash management footprint. This means treasury has more influence and impact over accounts receivable, collections and the order to cash cycle - with particular focus on the time value of money and credit risk, but does the current TMS, on its own, offer greater visibility and control over this cash process? Does the TMS facilitate the reporting of all group bank account balances while supporting a robust forecasting process and escalation of variations? To what extent can the TMS assist in setting-up a comprehensive system for cash forecasting for the company and its subsidiaries? And to what lengths can Treasury provide the resources with the necessary knowledge to facilitate this?

Evaluating the costs and benefits of integration

We have mentioned the ability of the system providers to deliver functionality for the more recent business developments. Is your vendor overly concerned about the problems that you have with connecting your treasury system to other system applications? It seems so, but how well does your system provider enable you to obtain directly the information you require? For example, what is the ability to capture foreign exchange embedded derivatives in contracts, or to extract the level of detail (or provide the flexibility for accurate manual input or overlays) for a reliable forecast short and medium term. How does your system allow you to interface directly with an Internet dealing platform without the need of another application, web based or not? Does your system facilitate the Single Euro Payment Area (SEPA)? Can you easily run a multilateral netting program in the chosen system?

These questions are sometimes ignored during the implementation of a treasury management system, but are critical in achieving an integrated solution that provides visibility and access to information that allows the treasury department to analyze and take prompt action that benefits the organization. Prioritizing the connectivity between systems should be part of considering existing and future requirements, as companies begin the selection process and certainly as implementation proceeds.



Evaluating the software delivery model

In the last 10 years, many well-known names in the treasury market have disappeared and others have come forward. Through consolidation, system vendors have become larger and expanded their global presence. This expanded scale has the potential that these vendors will be able to invest more in development to improve their solutions, meet the increased expectations of their global customer base and to provide better service levels. However, many treasurers are justly concerned with the lack of competition in this market if the consolidation trend were to continue. Nevertheless, we are happy to see new vendors included in this overview, which contributes to improved choices - installed, web-based or hosted - there is competition and innovation in this market.

In the past, most treasury management systems were either locally installed applications which had the advantage of the company being able to control the IT security, environment and data. The disadvantage, however, is that IT department resources were, and are, needed to implement and support this specialty application used by a relatively small population of users within the organization. An added complexity arises when your IT organization is also outsourced where it becomes more challenging to prevail on internal relationships and hierarchies to achieve your technology objectives.

To address these challenges and with the advent of improved network security, an increasing number of vendors are offering other software delivery models to meet these needs. Two models have increased their prominence and acceptance - the web-based solutions or Software-as-a-Service (SaaS solutions) or the hosting of your installed application. The SaaS model has the advantage of standardized processing, potentially simpler implementations and a per-user/per function pricing model that is budget-friendly. However, some companies have struggled with security and data privacy concerns as dictated by their internal security policies. Another alternative is to have your installed application hosted by your vendor. Hosting your application has the advantage of having your hardware installed, implemented and hosted at the vendor's location. The vendor supports your IT infrastructure needs relative to the treasury application. No training of your IT department is needed to install the application and manage the database and there is no need to schedule upgrades with your outsourced IT department - it's all provided by your vendor.

Assessing the vendor relationship during selection

One area that seems to be most in need of improvement centers on the support given to existing customers and control over apparent "development" costs. Whether this is due to system providers focusing on new clients to drive revenue or customizing existing developed solutions is unclear; however, it has become a constant source of frustration with many treasury departments. If you have a good working relationship with a high level of support from your TMS vendor, then it is most likely that you are a large company with a large budget or you have a highly dedicated vendor.

An important part of the selection process must focus on selecting a vendor that will offer the most rewarding client relationship package. In addition to assessing system capabilities, there is a need to view the commercial risks and the financial stability of the TMS provider, as well as the possibility of it being acquired and/or its TMS no longer being supported. Moreover, how much emphasis the vendor puts on after-the-sale customer support is also a question that requires affirmation during the selection process.

What else can the system vendor do for you? This is what used to be called the "soft factor". Good examples of these soft factors are implementation support and the fact that the vendor may also allocate (development) time (via invoices) on existing customers instead of focusing mainly on new business to drive revenue growth. The vendor may offer extended support once you "go live" on the system as your team transitions to its new roles. You may also expect your system vendor to have a vision on, and a solution for, the latest treasury business developments. Finally, you may expect from your system vendor that system developments are not only focused on enhancing the core system, but also focused on enhancing the integration with other systems in your organization.

Assessing the vendor - implementation and post sales support

Some of the distinguishing features of a successful implementation are the level of engagement on implementation by the treasury team and the vendor as well as the quality of implementation resources available. However, resources are always stretched, especially during the recent challenges in the financial markets. Companies seconding resources are often a critical factor in achieving a smooth and successful implementation project, but what level of resources and implementation support are offered by the vendor and are they independent enough to help ensure a smooth implementation?

Often, if vendor information is reviewed during the selection process, it is mostly the financial stability and the geographical location which are assessed. Vendors understand that it is the client who is the least experienced and, therefore, this has caused conscientious vendors to redesign their implementation approach. The best way to shorten implementation time and effort is to leave out choices. Choices need decisions and decisions need time. Therefore, some vendors have decided to sell their system with an industry standard parameter set. This is based on the size of the treasury, the position in the organization, the strategic goals, the complexity of the instruments, the transaction volume and the size of risk positions. The benefit is mutual. If your treasury is organized according to industry standards, the system can be implemented quickly because many choices have already been defined that allow you to achieve "go live" in half of the time usually needed for a full-scope implementation. In this regard, the vendor is more or less assured of a well-defined project with minimal risks. However, making educated choices is of paramount importance in implementing a TMS that offers your organization the power to drive through efficiencies and improvements in the way your treasury thinks and manages its cash, funding and risks.

Conclusion

In assessing the differentiators of a TMS, companies should consider not only their critical business requirements but also whether the solution can adapt to your changing business environment, the cost effectiveness of establishing integration points, the most beneficial software delivery model and a careful assessment of the vendor before, during and after implementation.

Chapter 2: Ernst & Young's treasury system selection and implementation approach

Background

When we work with clients to replace their current treasury management systems, there is usually a fair 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 their environment. However, the underlying theme appears to be a lack of clear expectations. To avoid this, companies should take a more pragmatic approach to system selection to ensure the best 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.

Ernst & Young Treasury Services has extensive experience in selecting and implementing treasury management packages. Ernst & Young's approach is largely based on experience in assisting clients in selecting and implementing a variety of treasury systems, as well as our industry knowledge of treasury management. Based on Ernst & Young's experience with the various vendors and an up-to-date understanding of the market and developments, Ernst & Young can help shorten the system selection procedure and assist in its successful implementation.¹

A key element in the Ernst & Young approach 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 system solution. Therefore, Ernst & Young can also provide technical knowledge that is both conceptual and practical so that appropriate technological solutions are considered.

The overall goal of Ernst & Young is to support the client in selecting the most appropriate treasury management solution to meet its defined business requirements and to support clients during their implementation of their chosen solution. Implementation is seen as a separate phase from the selection process, as it depends to a large extent on the vendor and the package chosen. For the various treasury management packages, tailored implementation processes have been developed by Ernst & Young, the vendors or other consultants. To avoid making any decisions in the selection phase that might negatively affect the implementation, Ernst & Young firmly believes that any selection project should be approached as the preparation to implementation.

¹ Treasury systems selection and implementation services are subject to Ernst & Young's client and engagement acceptance procedures.



Project plan system selection

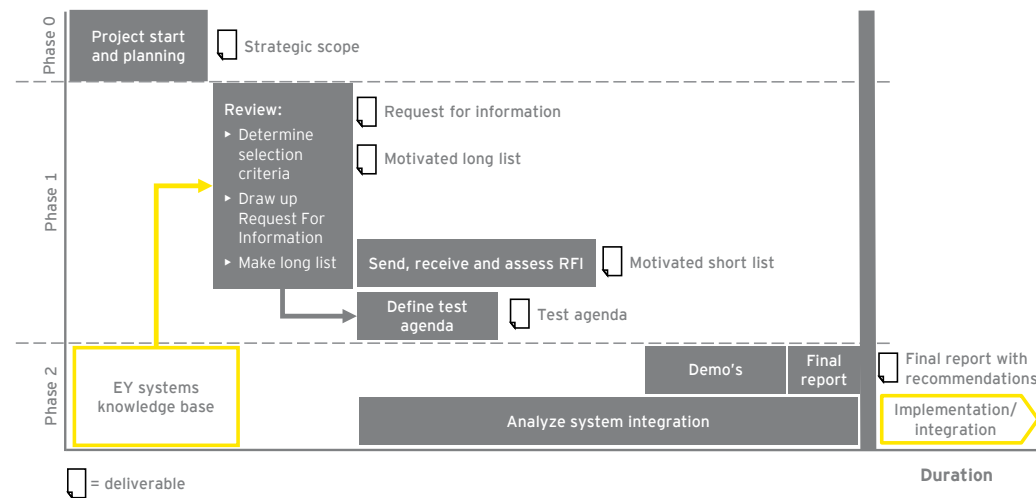


Figure 1: system selection project plan

Project start-up and planning

Before starting a project, a project plan should be drafted. This plan should contain a description of the resources required, a clear timetable with deadlines and work-products, and the responsibilities of each project member. Furthermore, it is important that the project management is in place before the project gets underway.

Phase 1: strategic framework and requirements specification

The first step Ernst & Young takes in the selection process is to carry out an assessment to identify the client's strategic framework. The strategic framework provides the necessary setting for the treasury management system. Taking or confirming previous decisions on strategy, overall business processes, organization and system philosophy lays the foundation for the requirements specification. The importance of this phase is often forgotten or considered irrelevant to the system selection. If this phase is omitted, however, the project runs the risk of being based on the wrong assumptions, which could result in fundamental and costly revisions late in the selection or implementation phases. Simultaneously, the treasury management processes, methods and techniques used are reviewed and compared with market practice.

Key considerations on requirements at this stage may typically include:

- ▶ Accounting standards in hedge designations and valuations
- ▶ Customized reporting tools
- ▶ Cash management benefits and multilateral netting opportunities
- ▶ Forecasting tools
- ▶ Real-time limit monitoring and risk management
- ▶ Security
- ▶ Robust interfaces with banking platforms, trading systems, accounting packages and market information sources
- ▶ TMS limitations and flexibility towards the changing needs of the business

The requirements specification describes the organization's requirements for the future TMS. The requirements specification is used as the basis for the Request for Information (RFI), sometimes called a vendor questionnaire.

Phase 1: strategic scope and requirement specification

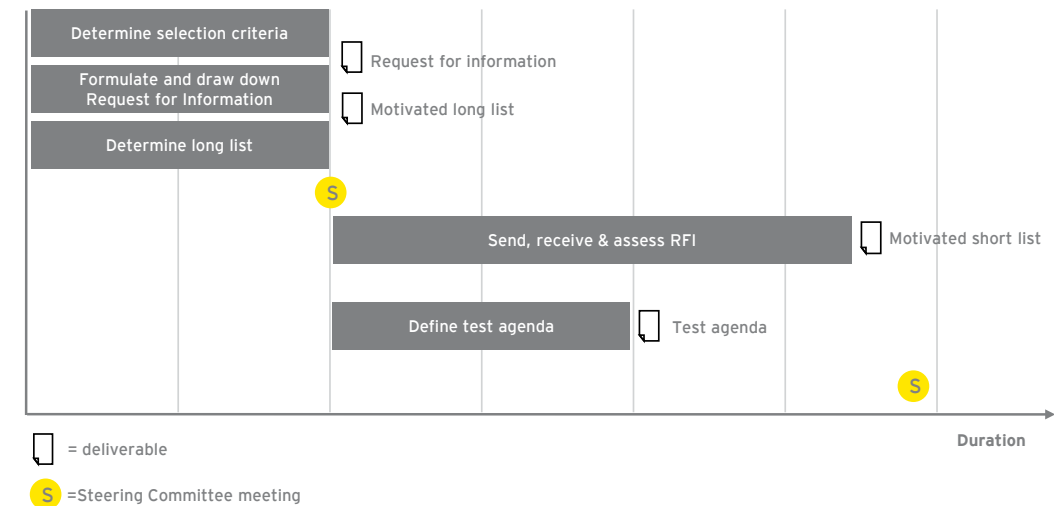


Figure 2: strategic framework and requirements specification

In Ernst & Young's view, it is not advisable to start this phase by sending out a Request for Proposal (RFP). The contractual complexity of a RFP undermines the goal of this phase of the selection process, which is to gather information about the vendor and the functional and technical specifications of the system.



Instead of the usual long list detailing a large number of suppliers who are asked to complete an RFI, Ernst & Young's approach is to propose four to six packages based on objective criteria based on the business requirements and agreed to by the client. A tailor-made questionnaire of business requirements geared to the complexity of the client's wishes and needs is sent to the short-listed vendors. The specificity of the questions enables a rapid analysis of the responses. Based on the weighting of the various questions in the RFI and scores for the vendors' answers, the responses to the RFI can be quantified, providing the client with a reasonably objective ranking of the vendors and their systems.

Phase 2: workshops and final system selection

During the system selection phase, the best and second-best choices of treasury management system and vendor candidate are identified. Two or three vendors which score best in the RFI phase are invited by the client to demonstrate their systems during a two-day workshop. The vendors receive a detailed workshop agenda with the invitation from the client and some examples of client-specific transactions or processes. The client and Ernst & Young will score the vendor demonstrations. These scores are compiled and compared to the RFI scores to illuminate the system's functionality and which system best meets the client's stated business needs. At the end of this phase, the client should know with some degree of certainty what their final choice of system and vendor will be. Their choice is supported through a combination of analyzing the results of the RFI and the demonstration of the vendor's systems during the workshops.

Phase 2: workshops and final system selection

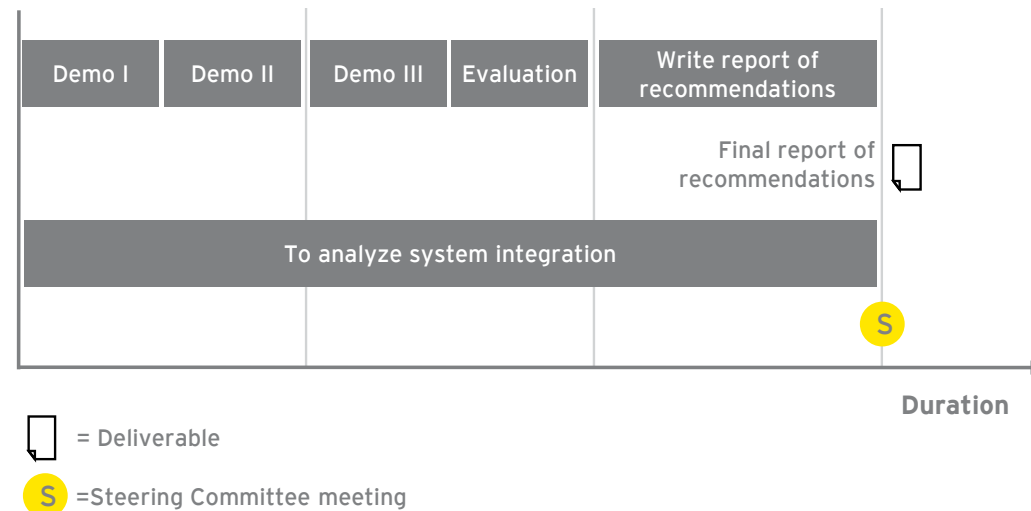


Figure 3: workshops and final system selection

After the system is selected by the client, the next step is the contract negotiations. The importance of these negotiations should not be underestimated, as the selected system may be operational for a period of five to 10 years. It is also important that the contract with the vendor reflects not only pricing, but the level of commitment to be given by both parties such as frequency of upgrades/patches to core system and level/length of support given to existing versions of the TMS package. During this phase, the implementation plan is drawn up. This plan should form part of the contract.

Phase 3: integration

Few projects will place as much burden on treasury, compliance and treasury accounting as a TMS implementation. Although much is written about how critical "project sponsorship" can be; a lack of "project ownership" can have disastrous results. Without well defined, documented and understood business needs, the project will languish because other business critical initiatives will always take precedence. The best project managers we have observed bring a number of skills to the table. The project management methodology is in itself important, but an understanding of treasury practices, the company's business, and treasury systems is crucial.

Another critical success factor we have observed in successful projects is the willingness of companies to deploy (or hire) participative "engaged thinking" resources to the project. These "visionary" users, through treasury and system knowledge, ask "What if...?", "How about this approach..?" or "Wouldn't it be great value add if...?" A good project manager will know when these resources generate an inspired solution that warrants a scope change.

During the hectic and sometimes rocky period of implementing the selected package, the client is confronted with various anxiety-inducing issues that can only be resolved with the aid of specialists in business consulting, implementation consulting, often provided by the vendor, and technical advice. Advisors can assist and guide management through the system selection and implementation. Once the vendor has been selected, an experienced and knowledgeable implementation advisor is key to the project's success.

Phase 3: integration process

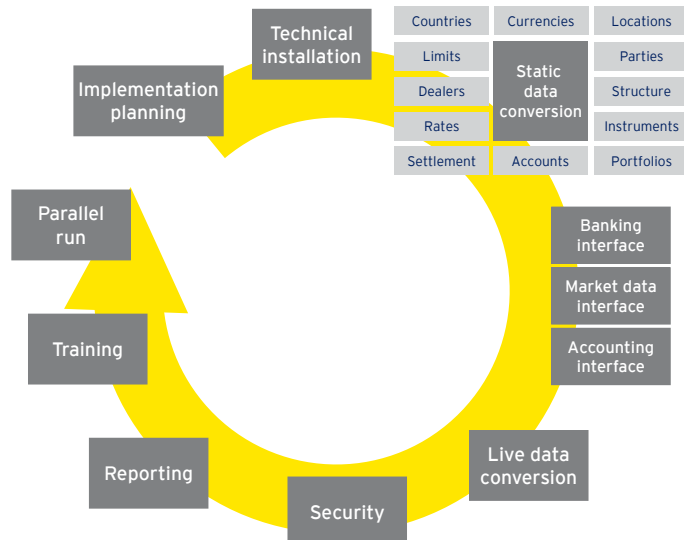


Figure 4: integration process

Ernst & Young offers business advisory services and the strategic approach to automating financial processes. Given its strategic vision of the entire financial process, Ernst & Young can advise and support the client in the integration of the selected package in the organization as a whole. As part of this process, the new working methods which the client wishes to introduce are incorporated into the configuration of the package, including report definition, interface configuration, system security and employee training, among others.



Proposed integrated project team

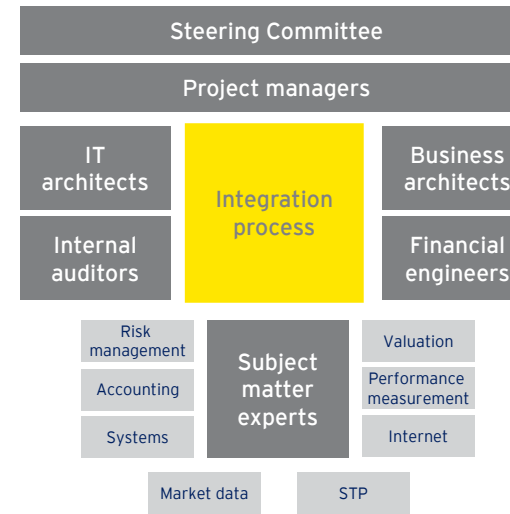


Figure 5: Ernst & Young resources for integration

Software implementation forms part of the system integration process performed by Ernst & Young at the client's organization. Hence, both Ernst & Young and the client have key roles to play during the implementation.

Many things can go wrong during a system implementation from interfacing to basic functionality, from large "show stopping" issues to short-term workarounds and from individual instrument calculation to portfolio limit management and measurement. Therefore, Ernst & Young provides an experienced project leader who, together with an internal project leader at the client, plays a key role in the project and reports to the Steering Committee. Ernst & Young provides support in resolving issues, which invariably arise during the integration process, and helps to identify blockers quickly and facilitate their removal.

Ernst & Young's international organization has subject matter resources available in all areas of treasury management system selection and integration.

Chapter 3: vendor profiles

The following vendors (Responding Vendors) completed questionnaires provided in July-September 2009 by Ernst & Young relating to their products. Ernst & Young 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 Ernst & Young. The information has not been updated and may therefore not be current.

Bellin



Company's history

Founding date: 1998	Home country: Germany	Number of staff: Over 40
Main evolutions: not specified		

Contact details

Name	Phone	Email
Florian Görig	+49 7822 4460 131	sales@bellin.de

Financials as of 2008

Ownership	Sales revenue	Net profit
	< €10 million	Not specified

Solution implementation

Introduced first version 1998	
Last version release 2009	
Implementations 150	

System name	Other solutions
Tm5	Not specified

City Financials



Company's history

Founding date: 1999	Home country: UK	Number of staff: 35
Main evolutions: not specified		

Contact details

Name	Phone	Email
Bruce Edhouse	+44 20 74644380	bruce.edhouse@cityfinancials.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned	£1.9 million	£50k

Solution implementation

Introduced first version	
2001	
Last version release	
January 2009	
Implementations	
50	

System name	Other solutions
eTC: treasury management software	Not applicable



CRM



Company's history

Founding date: 1985	Home country: Sweden	Number of staff: 12
Main evolutions: not specified		

Contact details

Name	Phone	Email
Knut Akerlund	+4686608830	knut.akerlund@crm.se

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned	EUR 1,2 million	Not specified

Solution implementation

Introduced first version	
1990	
Last version release	
2009	
Implementations	
71	

System name	Other solutions
CRM Finance: treasury system	Not applicable

GT Treasury



Company's history

Founding date: 1986	Home country: USA	Number of staff: more than 72
Main evolutions: GTreasury was created in 2008 in order to combine all the previous Gateway products and services under a single umbrella		

Contact details

Name	Phone	Email
Mary Ann Rydel	+1 847 847 3706	mrydel@gtreasury.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Not specified	Not specified	Not specified

Solution implementation

Introduced first version 1986	
Last version release 2008	
Implementations Not specified	

System name	Other solutions
Gateway	Not applicable



IT2



Company's history

Founding date: 1983	Home country: UK	Number of staff: 71
Main evolutions: purchased by Bank of America in 1988, by SimCorp A/S in 1999		

Contact details

Name	Phone	Email
Kelvin Walton	+44 20 8741 3553	kelvin.walton@it2tms.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Not specified	Not specified	Not specified

Solution implementation

Introduced first version 1996	
Last version release Q4 2008	
Implementations 223	

System name	Other solutions
IT2: treasury management system	Not applicable

Kyriba



Company's history

Founding date: 2000	Home country: France	Number of staff: 100
Main evolutions: at the beginning of 2007, Kyriba received new funding led by BRED Banque Populaire, one of the leading French banks in the payment industry and an important bank for the SWIFT network. More than \$14.4 million was invested in the oversubscribed round by BRED Banque Populaire and existing investors, including GRP Partners and Coface Holding.		

Contact details

Name	Phone	Email
Patrick Godet	+33 1 77 92 17 30	am_europe@kyriba.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately held by investor group including GRP Partners, BRED Banque Populaire, and Coface Holding	€10.3 million	Not specified

Solution implementation

Introduced first version	
2001	
Last version release	
May 2009	
Implementations	
267	



Misys



Company's history

Founding date: 1979	Home country: UK	Number of staff: 6,000
Main evolutions: not specified		Treasury-specific resources not disclosed

Contact details

Name	Phone	Email
Nick Clare	+44 20 3320 5660	nick.clare@misys.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Publicly listed	GBP 492 million	GBP 89 million

Solution implementation

Introduced first version	
1995	
Last version release	
March 2009	
Implementations	
280	

System name	Other solutions
Opics Plus	Misys Global Cash Pooling, Misys Confirmation Catching Service, Misys Eagleye, Misys Opics Risk Plus

System name	Other solutions
Cash management on demand: Software-as-a-Service platform	not applicable

Piteco



Company's history

Founding date: 1980	Home country: Italy	Number of staff: 70
Main evolutions: not specified		

Contact details

Name	Phone	Email
Andrea Guillermaz	+39023660931	aguillermaz@pitolab.it

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned	< €8 million	Not specified

Solution implementation

Introduced first version	
1981	
Last version release	
2004	
Implementations	
2195	

System name	Other solutions
PITECO Evo	CBC Corporate Banking Communication, DW4PITECO



Reval



Company's history

Founding date: 1999	Home country: US	Number of staff: more than 40
Main evolutions: in August 2009, Reval acquired its main competitor, FXpress Corporation		

Contact details

Name	Phone	Email
Jessica Lyn Zall	+1 212 901 9806	jessica.zall@reval.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned	Not specified	Not specified

Solution implementation

Introduced first version	
2001	
Last version release	
2009	
Implementations	
Not specified	

System name	Other solutions
Reval: single version global Software-as-a-Service Web-based platform	Reval Center Hedge Accounting, Reval Center Valuations

SageXRT



Company's history

Founding date: 1981	Home country: UK and France	Number of staff: 14,500
Main evolutions: not specified		

Contact details

Name	Phone	Email
E. Quentin	+ 33 (0)1 41 66 23 99	emmanuel.quentin@sage.com

Financials as of September 2008

Ownership	Sales revenue	Net profit
Publicly listed	Sage Plc: €1,696 billion; Sage France: €306 million	GBP189.5million

Solution implementation

Introduced first version 1985	
Last version release August 2009	
Implementations Not specified	

System name	Other solutions
Sage FRP Treasury: universe Edition	Sage ERP X3, Sage 1000, Ciel



SAP



Company's history

Founding date: 1972	Home country: Germany	Number of staff: 48,500
Main evolutions: not specified		Treasury-specific resources not disclosed

Contact details

Name	Phone	Email
Marc Astor	+49 6227 746824	marc.astor@sap.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Publicly listed	€11.565 billion	€2.84 billion

Solution implementation

Introduced first version 1990	
Last version release 2009	
Implementations Number of implementations not disclosed	

Sungard

SUNGARD®

Company's history

Founding date: 1983	Home country: US	Number of staff: 20,000
Main evolutions: not specified		Treasury-specific resources not disclosed

Contact details

Name	Phone	Email
Jamie Serino	+1 973 463 5722	jamie.serino@sungard.com

Financials as of 2008

Ownership	Sales revenue	Net profit
SunGard	US\$5.6 billion	Adjusted EBITDA US\$1.6 billion

Solution implementation

Introduced first version	
1994	
Last version release	
August 2009	
Implementations	
Not specified	

System name	Other solutions
AvantGard Treasury	AvantGard Receivables, AvantGard Payments, AvantGard Hosting Services



Thomson Reuters



Company's history

Founding date: 2008 (Thomson Reuters was created by The Thomson Corporation's purchase of Reuters on 17 April 2008)	Home country: Canada/UK	Number of staff: 5,000
Main evolutions: not specified		Treasury-specific resources not disclosed

Contact details

Name	Phone	Email
Bob Stark	+1 604 682 2862	bob.startk@thomsonreuters.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned	US\$13.4 billion	US\$1.5 billion

Solution implementation

Introduced first version	
2004	
Last version release	
2009	
Implementations	
350	

System name	Other solutions
Treasury™ version 11	<ul style="list-style-type: none"> ▶ 3000 Xtra ▶ Market Intelligence Desktop ▶ Reuters Trading for Foreign Exchange ▶ Multi Dealer Fx trading Portal ▶ Trade web ▶ Multi Dealer MM trading Portal ▶ Reuters Messaging ▶ Secure Instant Message Tool

Trinity



Company's history

Founding date: 1999	Home country: Germany	Number of staff: 25
Main evolutions: not specified		

Contact details

Name	Phone	Email
Henning von Tresckow	+49 69 951 1170	tresckow@trinity.de

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned	Not specified	Not specified

Solution implementation

Introduced first version	<ul style="list-style-type: none"> ■ Europe ■ US and Canada ■ APAC ■ Other
2000	
Last version release	
2009	
Implementations	
50	



WallStreet Systems



Company's history

Founding date: 1986	Home country: US, Regional Headquarters : London and Singapore	Number of staff: Over 500
Main evolutions: in January 2006, Warburg Pincus, acquired Wall Street Systems Inc. from the original founders of the company. In May 2008, Wall Street Systems acquired Aleri Global Banking (AGB), the wholesale banking division of Aleri, Inc. and its products Atlas, Global Banking Solution (GBS), CLS Server and Money Transfer.		

Contact details

Name	Phone	Email
Leonie Alsop	+44 20 3130 3000	leonie.alsop@wallstreetsystems.com

Financials as of 2008

Ownership	Sales revenue	Net profit
Privately owned, majority owned by Warburg Pincus LLC	US\$150 million	Not specified

Solution implementation

Introduced first version	<ul style="list-style-type: none"> ■ Europe ■ US & Canada ■ APAC ■ Other
2006	
Last version release	
2006	
Implementations	
126	

System name	Other solutions
Wallstreet Treasury, Wallstreet Suite	Wallstreet FX, Wallstreet Back-Office

Chapter 4: vendor responses

The following presents information provided by the Responding Vendors in response to questionnaires sent by Ernst & Young in July-September 2009. It has not been verified or substantiated by Ernst & Young. This information has not been updated and therefore may not be current. We have presented such information in chart form to facilitate review but neither the format of the chart nor the information included therein reflects any endorsement by Ernst & Young of any particular vendor or its products, or any opinion or conclusion with regard thereto.

	BELLIN GmbH FINANZDIENSTE tms tms	Wall Street Systems Wall Street Suite 7.2.2	Wall Street Systems Wall Street Treasury	SAP AG SAP Treasury Applications ERP 6.0	Sage Plc Sage FRP Treasury - Universe Edition 3.0	Misys Opics Plus 3.0	SunGard AvantGard AvantGard Treasury	G Treasury SS LLC. Gateway 10.12
General information regarding the vendor and the system								
User groups*								
Corporate treasury	1	1	1	1	1	2	1	1
Bank treasury	2	1	2	2	3	1	2	1
Asset (portfolio) management	2	1	2	2	2	2	2	2
Inhouse bank	1	1	1	1	2	2	1	1
Insurance company	2	2	2	2	2	3	1	1
Other:								
• Derivative sales desk	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
When								
First version	1998	1992	1993	1990	1985	1995	1994	1986
Latest version	2009	2008	June 2005	2009	2009	March 2009	August 2009	2008
Current version	tm5	7.2.2	3.05	ERP6.0 EHP4	V3.0 SP3	3.0	N/P	10.12
Latest installation	August 2009	July 2009	July 2009	2009	August 2009	Yes	N/P	Summer 2009
Number of installations								
Previous installations	110	51	117	N/P	N/P	240	N/P	N/P
Installed 2008	25	57	5	N/P	N/P	15	N/P	N/P
Installed 2009	15	24	4	N/P	N/P	25	N/P	N/P
Total	150	132	126	N/P	N/P	280	N/P	N/P
User group/community for the system+								
Europe Mainland	Yes	Yes	Yes	Yes	N/P	Yes	Yes	No
Nordic countries	No	Yes	No	No	N/P	Yes	Yes	No
UK and Ireland	No	Yes	No	Yes	N/P	Yes	Yes	No
North America (US, Canada and Mexico)	No	Yes	Yes	Yes	N/P	Yes	Yes	Yes
APAC (inc Aus, NZ, Jap, Sgp)	No	Yes	No	No	N/P	Yes	Yes	No
Central South America	No	Yes	No	No	N/P	Yes	Yes	No
Other	No	No	No	Yes	N/P	Yes	N/P	N/P
What types of delivery do you offer for this system?								
Locally installed	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Hosting (ASP)	Yes	Yes	Yes	Yes	No	No	No	Yes
Software as a Service (SaaS)	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

	Trinity Management Systems TRINITY-TMS 5.03	City Financials Ltd ETC 1.9	CRM Treasury Systems AB CRM Finance 6.9	Reval Software-as-a-Service (SaaS) / Web-based system 9.0	Kyriba Semea Cash Management On Demand 9.1	IT2 Treasury Solutions Limited IT2 6.4	PITECO S.p.A. PITECO Evo 3.00.05	Thomson Reuters Treasury 1.1
1	1	1	1	1	1	1	1	1
3	2	3	2	3	2	3	N/P	N/P
3	2	2	N/P	3	2	2	N/P	N/P
1	1	2	N/P	1	1	1	N/P	N/P
3	N/P	3	2	3	1	1	N/P	N/P
N/P	N/P	N/P	2	N/P	N/P	N/P	N/P	N/P
2000	2001	1990	2001	2001	1996	1981	2004	
2009	January 2009	2009	2009	May 2009	April 2008	Web-based PITECO evo	April 2009	
5	1.9	6.9	9.0	9.1	6.4	3.00.05	11	
2009	Ongoing	June 2009	2009	May 2009	August 2009	PITECO Evo	September 2009	
8	39	61	N/P	150	196	2100	N/P	
12	8	6	N/P	85	17	50	N/P	
15	3	4	N/P	36	10	45	N/P	
35	50	71	N/P	271	223	2195	350	
Yes	Yes	No	Yes	Yes	Yes	N/P	N/P	
No	No	Yes	No	No	Yes	N/P	N/P	
No	No	No	No	No	Yes	N/P	N/P	
No	No	No	Yes	Yes	Yes	N/P	Yes	
No	Yes	No	Yes	No	Yes	N/P	N/P	
No	No	No	No	No	No	N/P	N/P	
No	No	No	No	No	No	N/P	N/P	
Yes	Yes	Yes	No	No	Yes	Yes	No	
Yes	Yes	Yes	No	No	Yes	No	No	
Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	

Legend	
N/P	Not provided by vendor
N/A	Not applicable
*	1. The system was primarily developed for this user group. 2. The system was not designed primarily for this user group, but works sufficiently for this user group. 3. The system is not suited for this user group.
+	Y. Yes, by you N. No
^	1. Yes, and it has been done. 2. Yes, but it has not been done. 3. No, not possible.
**	1. The system offers this functionality (fully compliant). 2. The system was not primarily developed for this function but can solve the task with manual intervention or additional programming. 3. The instrument is not supported by the system at present.
++	1. Yes - basic package 2. Yes - add on patch 3. No
^^	1. The system gives a warning in real-time when a limit is violated. 2. A report can be printed on which actual exposure can be compared to limits. 3. The function is not supported by the system.



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Payment factory module								
Does your organization offer a module/functionality for a payment factory?	Yes - LMPAYMENT - multicountry and multibank payment solution for single and bulk payments in many formats	Yes	N/A	Yes	Yes	No	Yes	Yes
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?	Around 2 patchdays a year with required fixes and additional functions. Major release changes are performed all 3-4 years	2 per year	1 per year	One major release per year	12 to 18 months	One major release per year	One major release per year	One major release per year
Free system updates								
Yes/No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Historical frequency of updates	all 3-4 years	N/P	N/P	N/P	all 3-4 years	2 to 4 years	N/P	One per year
System's user languages								
English	Yes	Yes	Yes	N/P	Yes	Yes	Yes	Yes
Spanish	Yes	No	Yes	N/P	Yes	No	N/P	Yes
French	Yes	No	Yes	N/P	Yes	No	N/P	Yes
German	Yes	No	Yes	N/P	Yes	No	N/P	N/P
Dutch	N/P	No	Yes	N/P	No	No	N/P	N/P
Italian	N/P	No	Yes	N/P	Yes	No	N/P	Yes
Arabic	N/P	No	No	N/P	No	No	N/P	N/P
Mandarin	N/P	No	No	N/P	No	No	N/P	N/P
Other:								
► Chinese	Yes	No	No	N/P	No	No	Yes	N/P
► Polish	Yes	No	No	N/P	No	No	N/P	N/P
► Portuguese	N/P	N/P	N/P	N/P	Yes	No	N/P	N/P
► Russian	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
► Czech	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
► Slovak	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
Validation of the system by external party								
Description	Cf answers	Cf answers	Yes	Yes	No	Yes - PWC	Yes	Yes
SOX, SEPA, IAS compliant?								
SOX compliant?	Yes	Yes	Yes	No	Yes	N/P	Yes	Yes
SEPA compliant?	Yes	N/P	Yes	Yes	Yes	N/P	Yes	Yes
Accounting standards compliant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Islamic finance compliant?								
Yes/No	No	No	No	No	No	Yes	Yes	No
Name of the specific version	N/A	N/A	N/A	N/A	N/A	Islamic module	N/P	N/A
Technical platform interfacing								
Supported interfaces								
Accounting systems								
BAAN	Yes	Yes	Yes	N/P	Yes	No	N/P	Yes
Coda	Yes	Yes	Yes	N/P	Yes	No	Yes	Yes
Exact	Yes	Yes	Yes	N/P	No	No	N/P	Yes
FIS 2000	Yes	Yes	Yes	N/P	No	No	Yes	Yes

Trinity Management Systems TRINITY-TMS 5.03	City Financials Ltd ETC 1.9	CRM Treasury Systems AB CRM Finance 6.9	Reval Software-as-a-Service (SaaS) / Web-based system 9.0	Kyrilba Semea Cash Management On Demand 9.1	IT2 Treasury Solutions Limited IT2 6.4	PITECO S.p.A. PITECO Evo 3.00.05	Thomson Reuters Treasury 11
Yes	No	No	No	Yes	Yes	Yes	N/P
One major release per year	Every 18 months	4 per year	Two to eight per year	One to two major releases per year	One major release per year	Two to three minor releases per year - one major release per year	Every 6 months
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N/P	18 months	4 to 6 p.a.	Two major releases per year	One to two major releases per year	One major release per year	N/P	Every 6 months
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	Yes	No	No	N/P
Yes	No	No	No	Yes	No	No	N/P
Yes	No	No	No	Yes	No	No	N/P
No	No	No	No	Yes	No	No	N/P
No	No	No	No	No	No	No	N/P
No	No	No	No	No	No	No	N/P
No	No	No	No	No	No	No	N/P
No	No	No	No	No	No	No	N/P
No	No	No	No	No	No	No	N/P
No	No	No	No	No	No	No	N/P
No	No	No	No	No	No	No	N/P
N/P	N/P	N/P	N/P	Yes	No	No	N/P
N/P	N/P	N/P	N/P	Yes	No	No	N/P
N/P	N/P	N/P	N/P	Yes	No	No	N/P
N/P	Yes	N/P	Yes	Yes	Yes	No	Yes
Yes	Yes	N/P	Yes	Yes	Yes	Yes	N/P
Yes	N/P	N/P	No	Yes	No	Yes	N/P
Yes	Yes	N/P	Yes	No	Yes	Yes	N/P
No	No	N/P	No	No	No	No	No
N/A	N/A	N/P	N/A	N/A	N/A	N/A	N/A
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	No	Yes
N/P	Yes	Yes	No	Yes	Yes	No	Yes

Legend	
N/P	Not provided by vendor
N/A	Not applicable
*	1. The system was primarily developed for this user group. 2. The system was not designed primarily for this user group, but works sufficiently for this user group. 3. The system is not suited for this user group.
+	Y. Yes, by you N. No
^	1. Yes, and it has been done. 2. Yes, but it has not been done. 3. No, not possible.
**	1. The system offers this functionality (fully compliant). 2. The system was not primarily developed for this function but can solve the task with manual intervention or additional programming. 3. The instrument is not supported by the system at present.
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^^	1. The system gives a warning in real-time when a limit is violated. 2. A report can be printed on which actual exposure can be compared to limits. 3. The function is not supported by the system.



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JD Edwards	Yes	Yes	Yes	N/P	Yes	No	Yes	Yes
Hyperion	Yes	Yes	Yes	N/P	No	No	Yes	Yes
Navision	Yes	Yes	Yes	N/P	No	No	N/P	Yes
PeopleSoft	Yes	Yes	Yes	N/P	Yes	No	Yes	Yes
Oracle	Yes	Yes	Yes	N/P	Yes	Yes	Yes	Yes
SAP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other:								
▸ Sage ERP X3	N/P	N/P	N/P	N/P	Yes	N/P	N/P	N/P
▸ API capability to integrate third-party system	N/P	N/P	N/P	N/P	N/P	Yes	N/P	N/P
▸ Interface with any third-party system	N/P	N/P	N/P	N/P	N/P	N/P	N/P	Yes
▸ CEGID	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
▸ QUALIAC	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
Specialty platforms								
Reval	N/P	Yes	Yes	N/P	No	No	N/P	Yes
Perfect Hedge	N/P	N/P	N/P	N/P	No	No	N/P	Yes
Other:								
▸ ARPSON	N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
Market information systems								
Reuters	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bloomberg	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bridge	N/P	Yes	N/P	Yes	No	No	N/P	Yes
Telekurs	N/P	Yes	N/P	Yes	Yes	No	N/P	Yes
Datastream	N/P	Yes	N/P	Yes	No	No	N/P	Yes
Other:								
▸ Market map	N/P	N/P	N/P	N/P	N/P	N/P	Yes	N/P
Multibank dealing system								
FX all	Yes	N/P	Yes	Yes	No	Yes	Yes	Yes
Currenex	Yes	Yes	Yes	Yes	No	No	Yes	Yes
360 T	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Ebs	N/P	Yes	N/P	Yes	No	Yes	N/P	Yes
Other:								
▸ API capability to integrate third-party system	N/P	N/P	N/P	N/P	N/P	Yes	N/P	N/P
Payment factory systems								
BOA	Yes	Yes	No	N/P	No	Yes	N/P	Yes
Citi	Yes	Yes	No	N/P	Yes	No	N/P	Yes
Other:								
▸ API capability to integrate third-party system	N/P	N/P	N/P	N/P	N/P	Yes	N/P	N/P
Bank reconciliation systems	N/P	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clearing/matching systems	N/P	Yes	Yes	Yes	No	Yes	Yes	Yes
Netting systems	N/P	Yes	N/A	Yes	No	Yes	Yes	Yes
Risk management systems	N/P	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Microsoft Office applications	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Internet/Intranet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Swift	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fax	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Email	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other:								
▸ API capability to integrate third-party system	N/P	N/P	N/P	N/P	N/P	Yes	N/P	N/P

Trinity Management Systems TRINITY-TMS 5.03	City Financials Ltd ETC 1.9	CRM Treasury Systems AB CRM Finance 6.9	Reval Software-as-a-Service (SaaS) / Web-based system 9.0	Kyriba Semea Cash Management On Demand 9.1	IT2 Treasury Solutions Limited IT2 6.4	PITECO S.p.A. PITECO Evo 3.00.05	Thomson Reuters Treasury 11
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N/P	N/P	N/P	No	N/P	Cf answers	N/P	Cf answers
N/P	N/P	N/P	No	N/P	Cf answers	N/P	Cf answers
N/P	N/P	N/P	No	N/P	Cf answers	N/P	Cf answers
N/P	N/P	N/P	N/P	Yes	Cf answers	N/P	Cf answers
N/P	N/P	N/P	N/P	Yes	Cf answers	N/P	Cf answers
No	N/P	N/P	Yes	Yes	Yes	N/P	Yes
No	N/P	N/P	No	No	Yes	N/P	Yes
N/P	N/P	N/P	N/P	Yes	N/P	N/P	Cf answers
Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Yes	Yes	Yes	No	No	Yes	Yes	Yes
Yes	Yes	Yes	No	No	Yes	N/P	N/P
Yes	Yes	Yes	No	No	Yes	N/P	Yes
N/P	N/P	N/P	No	N/P	Cf answers	N/P	N/P
Yes	Yes	Yes	Yes	Yes	Yes	N/P	Yes
N/P	Yes	N/P	No	No	Yes	N/P	N/P
Yes	Yes	Yes	No	No	Yes	N/P	Yes
N/P	N/P	N/P	No	N/P	N/P	N/P	N/P
No	N/P	N/P	No	No	Yes	N/P	N/P
No	N/P	N/P	No	No	Yes	Yes	N/P
N/P	N/P	N/P	No	N/P	Yes	N/P	N/P
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	N/P	No	No	Yes	N/P	Yes
Yes	Yes	Yes	No	No	Yes	N/P	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	N/P
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	Yes	Yes	No	Yes	Yes	Yes	No
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
N/P	N/P	N/P	No	N/P	N/P	N/P	N/P

Legend	
N/P	Not provided by vendor
N/A	Not applicable
*	1. The system was primarily developed for this user group. 2. The system was not designed primarily for this user group, but works sufficiently for this user group. 3. The system is not suited for this user group.
+	Y. Yes, by you N. No
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Functionality Instrument coverage								
Instrument coverage**								
Interest rate instruments								
Overnight loans and deposits	1	1	1	1	1	1	1	1
Short-term loans and deposits	1	1	1	1	1	1	1	1
Short-term roll-over loans and deposits	1	1	1	1	1	1	1	1
Repos	2	1	1	1	1	1	1	1
Zero coupon CD, CP and T-bills	2	1	1	1	1	1	1	1
Coupon bearing CD, CP and T-bills	1	1	1	1	1	1	1	1
Commercial paper and deep discount notes	1	1	1	1	1	1	1	1
Private placements								
▶ Bullet	1	1	1	1	1	1	1	1
▶ Linear	1	1	1	1	1	1	1	1
▶ Annuity	1	1	1	1	1	1	1	1
Private placements with irregular first coupon period and/or postponed first coupon payment	1	1	1	1	1	1	1	1
Private placements with irregular last redemption (7-year loan with 6 similar redemption payments and one final redemption in year 7)	1	1	1	1	1	1	1	1
Medium term notes with distinction between total facility and issued notes	1	1	1	1	1	1	1	1
Plain vanilla bonds	1	1	1	1	1	1	1	1
Callable bonds	2	1	1	1	2	1	2	1
Puttable bonds	2	1	3	1	2	1	2	1
Convertible bonds	2	1	3	1	3	1	2	1
Reversed convertible bonds	2	3	3	1	3	1	2	1
Floating rate notes	1	1	1	1	1	1	1	1
Notes with index or inflation linked coupons	1	1	1	1	1	1	1	1
Leases	1	3	1	1	1	3	2	1
Mortgages	1	1	1	1	1	1	2	1
Syndicated loan	1	1	1	1	1	1	1	1
Guarantees	1	1	1	1	3	1	1	1
FRAs (forward rate agreement)	1	1	1	1	1	1	1	1
Futures on bonds and money market instruments	1	1	3	1	1	1	1	1
Interest rate swaps	1	1	1	1	1	1	1	1
Cross-currency interest rate swaps	1	1	1	1	1	1	1	1
Constant maturity swap	1	1	1	1	1	1	1	1
Caps, floors, collars	1	1	1	1	1	1	1	1
Swaptions	1	1	1	1	1	1	1	1
Hybrids	2	1	3	1	2	1	2	1
All of the above in all currencies	1	1	1	1	1	1	1	1
Interest instrument with:								
Irregular coupon periods	1	1	1	1	1	1	1	1

Trinity Management Systems TRINITY-TMS 5.03	City Financials Ltd ETC 1.9	CRM Treasury Systems AB CRM Finance 6.9	Reval Software-as-a-Service (SaaS) / Web-based system 9.0	Kyriba Semea Cash Management On Demand 9.1	IT2 Treasury Solutions Limited IT2 6.4	PITECO S.p.A. PITECO Evo 3.00.05	Thomson Reuters Treasury 11
1	1	1	2	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	2	3	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	2	1	2	1
1	1	1	1	1	1	2	1
1	1	1	1	3	1	1	1
1	2	2	1	3	1	1	1
1	2	2	1	3	1	1	1
2	2	2	3	3	1	2	1
2	2	2	3	3	1	2	N/P
1	1	1	1	1	1	1	1
1	1	1	1	1	1	3	1
1	1	2	2	3	1	1	2
1	1	1	2	3	1	1	2
1	1	1	2	3	1	1	1
1	1	1	1	3	1	1	1
2	1	1	1	3	1	1	3
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	3	3	2	2
1	1	1	1	3	1	1	1
1	1	1	1	3	1	2	3
2	1	2	3	3	1	3	3
1	1	1	1	1	1	1	1
1	1	1	1	1	1	2	1

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Irregular redemption (roller coaster)	1	1	1	1	1	1	1	1
Coupon and redemption in different currencies	1	1	3	1	1	1	2	1
Amortizing, sinking or climbing notional amount	1	1	1	1	1	1	1	1
Index linked coupons	1	1	1	1	1	1	1	1
Formula based coupons	1	1	3	1	2	1	2	1
Formula based redemption	1	1	1	3	3	1	2	1
Optional elements	1	1	1	1	3	1	2	1
Currency instruments								
Spot and forwards	1	1	1	1	1	1	1	1
Currency swaps	1	1	1	1	1	1	1	1
Plain vanilla, put/call options	1	1	1	1	1	1	1	1
Barrier options (knock-in/out, reverse)	1	1	1	1	1	1	1	1
Average rate options	2	3	3	1	1	1	2	1
Non-derivable forwards	1	1	1	1	1	1	1	1
All worldwide currencies available	1	1	1	1	1	1	1	1
Equities								
Equities	1	1	3	1	1	1	1	2
Equity options (vanilla)	2	1	3	1	1	1	3	2
Treasury shares	2	1	3	1	1	2	2	2
Commodities instruments								
Commodity forward	1	1	1	1	1	2	1	1
Commodity swaps (vanilla)	1	1	1	3	1	2	1	1
Commodity swaps (Asian)	1	1	3	3	3	2	2	1
Commodity options (vanilla)	1	1	1	3	1	2	3	2
Commodity options (Asian)	1	3	3	3	3	2	3	2
Currency independent instrument coverage++								
	1	1	1	1	1	1	1	1
Create instrument by entering cash flow tables								
with coupon and redemption flows++								
	3	1	1	1	1	1	1	1
Create instrument based on existing building blocks++								
	3	1	3	1	1	1	1	1
Type of collateral								
Only cash	N/P	Yes	No	No	Yes	N/P	Yes	Yes
Other financial instruments	Yes	Yes	N/P	Yes	N/P	Yes	Yes	Yes
Bank guarantees++								
	1	1	1	1	3	1	1	1
Third party as guarantor++								
	1	1	1	1	3	1	1	1
Amortize the notional amount of guarantee++								
	1	1	1	1	3	3	2	1
Flexible end date for a guarantee++								
	1	1	1	1	3	3	1	1

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1	1	1	1	1	1	2	1
1	1	1	1	3	2	3	2
1	1	1	1	1	1	2	1
2	1	1	1	1	1	3	1
2	2	2	1	3	2	3	2
1	2	2	2	3	2	3	2
1	2	2	1	N/P	1	3	2
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	3	1	1	1
1	1	1	1	3	1	2	1
2	1	1	1	3	1	3	1
2	1	1	1	3	1	1	1
1	1	1	1	1	1	1	1
1	1	1	3	3	1	1	3
1	1	1	3	3	1	3	3
2	1	2	3	3	1	3	3
1	1	1	1	3	1	3	2
1	1	1	1	3	1	3	3
1	1	1	1	3	1	3	3
1	1	1	1	3	1	3	3
1	1	2	1	3	1	3	3
1	1	1	1	1	1	1	1
3	1	1	1	1	1	3	3
1	1	3	3	3	1	3	3
Yes	Yes	Yes	Yes	No	N/P	Yes	No
N/P	N/P	Yes	Yes	No	Yes	Yes	No
1	1	1	3	3	1	1	3
1	1	1	3	3	1	1	N/P
1	1	1	3	3	1	1	N/P
1	1	1	3	3	1	1	N/P

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Letters of credit++								
	1	1	1	1	1	3	1	1
Position management								
Cash and liquidity management++								
Manage different entities with different base currencies, chart of accounts, bank accounts	1	1	1	1	1	1	1	1
Definable bank account structures	1	1	1	1	1	1	1	1
Categorization of bank accounts as internal (in-house bank) or external	1	1	1	1	1	1	1	1
Mark bank accounts, entities, countries for trapped cash	1	1	1	1	1	3	1	1
Reporting functionality to see bank balances on different levels (consolidated level, country, entity, currency, etc.)	1	1	1	1	1	1	1	1
Calculation of liquidity, total cash positions and trapped cash	1	1	1	1	1	1	1	1
Import and aggregate account statements from several banks	1	1	1	1	1	3	1	1
List all bank accounts per legal entity with signature rights and static data	1	2	1	3	1	1	1	1
Handle cash as collateral	1	1	3	3	1	1	1	1
Cash forecasting++								
Import future cash flows	1	2	1	1	1	1	1	1
Input forecasts through intranet version of application	1	1	1	1	2	1	1	1
Import live cash movements	1	1	1	1	1	1	1	1
Compare actual cash flows	1	1	1	1	1	1	1	1
Show realization of liquidity forecasts compared to actual cash flows	1	1	1	1	1	1	1	1
Distinction between status of cash flows/ forecasts	1	1	1	1	1	1	1	1
Distinction between cash flow types	1	1	1	1	1	1	1	1
Statistics analysis between forecast and realization	1	1	1	1	1	1	1	1
In-house banking++								
Account statements with total balance and cash movements	1	2	1	1	1	1	1	1
Interest statements on internal and external accounts	1	1	1	1	1	1	1	1
Distinction between internal and external payments	1	1	1	1	1	1	1	1
Target balancing proposition	1	1	1	1	1	1	1	1
Automatic routing internal payments	1	1	1	1	1	1	1	1
Automatic creation of intercompany loans	1	1	1	1	1	1	1	1
Possibility for intercompany netting	1	1	1	1	3	1	1	1

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1	1	3	3	3	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	3	3	1	1	N/P
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	1	3	1	1	1
1	1	1	2	1	1	1	1
1	1	1	1	1	1	1	1
1	1	2	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	3	3	1	1	1	1
1	1	N/P	3	1	1	1	1
1	1	N/P	3	1	1	1	1
1	1	N/P	1	1	1	1	1
1	1	N/P	3	1	1	1	1
1	1	N/P	3	1	1	1	1
1	1	N/P	3	1	1	1	3
1	1	N/P	3	1	1	1	1

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Web-based publishing of bank statements	1	1	1	1	1	1	1	1
Multilateral intercompany netting functionalities	1	1	1	1	3	1	1	1
Functionality for multicurrency netting	1	1	1	1	3	1	1	1
Offer intercompany loans and deposits to internal account holders with respective interest limits and tax withholding	1	1	1	1	1	1	1	1
Definition of netting cycles	1	1	1	1	3	1	2	1
Automatic generation of confirmations for netted transactions	1	1	1	1	3	1	1	1
Upload of netting details in the ERP system in order to perform reconciliations	1	1	1	1	3	1	1	1
Configuration of netting instructions depending on the account structure	N/P	1	1	3	3	1	1	1
Automatic generation of detailed netting reports to be sent to entities	N/P	1	1	3	3	1	1	1
Simulation of netting cycles	1	1	1	1	3	1	2	1
Schedule unattended (nightly) routines for (encrypted) uploading of files	2	1	1	1	1	1	1	1
Reporting of unprocessed transactions	1	1	1	1	1	1	1	1
Cash pooling++								
Support for single cash pools	1	1	1	1	1	1	1	1
Support for cross-currency cash pools	1	1	3	3	1	1	1	1
Creation of bank account structure	1	1	1	1	1	1	1	1
The ability to define cash pools within cash pools	1	1	3	1	1	3	1	1
An unlimited number of levels in a cash pool	1	1	1	1	1	1	1	1
Sweeping proposal for zero balancing/levelling	1	1	1	1	1	1	1	1
Country specific holidays++								
Take into account country, currency and location of specific holidays	1	1	1	1	1	1	1	1
Calendar "uploading"++								
Calendar "uploading" such as Target calendar	1	1	1	3	1	1	3	1
Performance revaluations++								
Real-time	1	1	3	3	1	1	1	2
Batch	2	1	1	1	1	1	1	2
Update on new trade	1	1	1	3	3	2	2	2
Update on market data change	1	1	1	3	3	2	2	2
Update on predefined sub-minute time intervals	2	1	1	3	1	2	1	2

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1	1	N/P	3	1	1	1	1
1	1	N/P	3	1	1	1	3
1	1	N/P	3	1	1	1	3
1	1	N/P	1	1	1	1	2
1	1	N/P	3	1	1	1	N/A
1	1	N/P	3	1	1	1	N/A
1	1	N/P	1	3	1	1	N/A
1	1	N/P	3	3	1	1	N/A
1	1	N/P	3	1	1	1	N/A
1	1	N/P	3	1	1	1	N/A
1	1	N/P	3	1	1	1	1
2	1	N/P	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
3	1	1	1	1	1	1	1
3	1	1	1	3	1	1	1
1	2	1	2	1	1	1	3
3	1	1	1	1	1	N/P	1
1	2	1	3	1	1	N/P	3
1	2	1	3	1	1	N/P	1
1	1	1	1	3	1	N/P	3

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Pre-defined allocation key for block trading++	1	1	1	3	1	1	1	1
Electronic dealing++	2	2	2	1	2	1	3	1
Hierarchical portfolio structure++	1	1	1	1	3	1	1	1
Anticipated exposure by portfolio++	1	1	1	1	1	1	1	1
Use dummy trades and phantom portfolios++	1	1	1	1	1	1	1	1
Include potential trades in position++	1	1	1	1	1	1	1	1
Dealer's diary++	1	1	1	1	1	1	1	1
Dealing++								
Registration of historic quotes/bids and spreads	1	1	1	3	1	1	1	1
Modification of deals/orders via dealer intervention before being placed in the market	1	1	1	3	1	1	1	1
Report form	1	1	1	3	1	3	1	1
Automatic calculation of broker fees / transaction costs	1	1	1	3	1	1	1	1
Interfaces between corporate treasury and business units allowing for deal capturing and position reporting	1	1	1	1	1	1	1	1
Capture deal requests from subsidiaries								
▶ Loans	1	1	1	3	1	1	1	1
▶ Deposits	1	1	1	3	1	1	1	1
▶ FX spot	1	1	1	3	1	1	1	1
▶ FX forward	1	1	1	3	1	1	1	1
▶ FX options	1	1	1	3	1	1	2	1
▶ Non-deliverable forwards	1	1	1	3	1	1	1	1
Dummy deals, showing the real-time impact of the deal on financial positions, forecasts and risks	1	1	1	3	1	1	1	1
Perform pre-deal limit checks	1	1	1	1	1	1	1	1
Convert deal requests automatically to an external deal (back-to-back)	3	1	1	3	1	1	1	1
Link between internal and external transactions (e.g., for internal hedge requests)?	1	1	1	1	1	1	1	1
Confirmation and settlement								
Confirmation++								
Generating confirmation letters with user definable content	1	1	1	1	1	1	1	1

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1	3	3	3	3	1	1	3
1	2	1	3	3	1	1	1
2	1	1	1	3	1	1	1
1	1	1	1	3	1	1	1
1	1	1	1	1	1	N/P	1
1	1	1	1	1	1	N/P	2
1	1	1	1	1	1	1	1
1	1	3	1	1	1	N/P	1
1	1	1	3	1	1	N/P	3
1	1	3	1	1	1	1	1
2	1	3	3	3	1	1	2
1	1	1	1	1	1	1	1
1	3	1	1	1	1	N/P	1
1	3	1	1	1	1	N/P	1
1	1	1	1	1	1	N/P	1
1	3	1	1	3	1	N/P	1
2	3	1	1	3	1	N/P	1
1	1	1	1	1	1	N/P	2
1	1	3	3	1	1	N/P	1
1	1	1	2	3	1	N/P	1
1	1	1	1	3	1	N/P	3
1	1	1	3	1	1	1	1

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Templates for confirmation letters for different instruments	1	1	1	1	1	1	1	1
Standard interface with confirmation/settlement software	3	1	1	1	2	1	1	3
For automatic confirmation matching of deals	3	1	1	1	3	1	1	1
Automatically generate and send confirmations and reports via email	2	1	1	1	1	2	1	1
Electronically match incoming SWIFT confirmations++	3	1	2	1	2	1	1	1
If no, generation MTXX SWIFT++	3	1	2	1	2	N/A	1	1
Electronically match incoming TWIST confirmations++	3	1	2	1	2	3	1	2
Interface with deal matching software++	3	1	1	1	2	1	1	2
Electronic banking (EB) ++								
Import of balances and movements from EB systems	1	1	1	1	1	1	1	1
Export payments to EB systems	1	1	1	1	1	1	1	1
Connecting directly to a bank's server for exchanging EB information	1	1	1	1	1	3	1	1
Automated m-on-n reconciliation of cash flow forecasts with actual movements	1	1	1	1	1	2	1	1
Import of worldwide bank balances via SWIFT MT950/ MT940 msgs	1	1	1	1	1	2	1	1
Import of intraday EB information	1	1	1	1	1	2	1	1
Settlement++								
Standard settlement instructions (SSI) per instrument, per counterparty	1	1	1	1	1	1	1	1
Automatic payment generation from transactions	1	1	1	1	1	1	1	1
Warning signals when transaction details are irregular	1	1	1	1	1	3	1	1
Ability to define no payment instruction	1	1	1	1	1	1	1	1
Proposal for rate resets of floating coupons	1	1	1	1	3	1	1	1
Accounting								
Internal general ledger++								
	3	1	1	1	1	1	1	1
Accounting++								
Journal entries in accordance with user specified accounting rules	1	1	1	1	2	1	1	1

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1	1	1	1	1	1	1	1
1	1	1	2	3	1	1	1
N/P	1	1	3	3	3	1	3
1	1	1	1	1	1	1	1
2	1	1	3	3	3	1	3
3	N/P	N/P	3	3	1	N/P	3
3	3	1	3	3	1	2	3
2	1	1	2	3	1	3	2
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
2	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	1	3	1	1	1	1
1	1	3	2	1	1	1	3
1	1	1	1	1	1	1	1

Legend	
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Transfer of accounting information to the GL independently for the different legal entities in the system	1	1	1	1	2	1	1	1
Define unique accounting periods for each legal entity	1	1	1	1	3	1	1	1
Generation of balance sheets and P&L's	3	1	1	1	N/P	1	1	2
Calculation of realized and unrealized results	1	1	1	1	1	1	1	1
Calculation of effective interest and amortized cost	1	1	1	1	1	1	1	1
Calculation of daily accruals	1	1	1	1	1	1	1	1
Automatic reversals of postings when correcting transaction errors	1	1	1	1	3	1	1	1
Forward and back dated entries	1	1	1	1	1	1	1	1
Linking financial instruments together (i.e., hedges and underlying)	1	1	1	1	1	1	1	1
Functionality for hedge accounting	1	1	1	1	1	1	1	1
Manual designation of hedge relationships (e.g., fair value hedge, cash flow hedge)	1	1	1	1	1	1	1	1
Automatically perform hedge effectiveness testing? Which methods?								
▶ A comparison of the critical terms of the hedging instrument and the item hedged	1	1	1	1	1	1	2	2
▶ Dollar-offset method	1	1	2	1	1	3	1	2
▶ Volatility Reduction Method	3	1	2	3	3	3	3	2
▶ Regression analysis	3	1	2	1	1	1	1	2
Perform both prospective and retrospective hedge effectiveness testing	1	1	2	1	1	1	1	2
Automatically produce hedge documentation, in compliance with FAS133/IAS39	1	1	2	1	1	1	1	2
Disclose for any given period, which amounts are (de) recognized in equity and/or the income statement in relation to hedging instruments	1	1	2	1	1	1	1	2
Disclosure: does your system produce financial risk exposure analysis in compliance with IFRS 7?++								
Balance sheet information for categories of financial assets and liabilities	1	1	2	1	1	1	1	2
Items of income, expense, gains or losses on financial instruments	2	1	2	1	1	1	2	2

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1	1	1	1	3	1	1	1
1	1	1	1	3	1	1	3
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	3	1	3	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	3	1	1	3
1	1	1	1	3	1	1	3
1	1	1	3	3	1	2	3
1	1	1	1	3	1	2	3
2	1	3	1	3	1	2	3
1	1	2	1	3	1	2	3
2	1	1	1	3	1	2	3
1	2	1	1	3	1	2	3
1	1	1	1	3	1	3	3
3	1	1	1	3	1	3	3

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Cash flow hedge specific information: the periods when the cash flows are expected to occur and when they are expected to affect profit or loss	1	1	2	1	1	1	2	2
Cash flow hedge specific information: the detail of the amount recognized in/ derecognized from equity during the period	1	1	2	1	1	1	2	2
Ineffectiveness recognize in profit or loss	1	1	2	1	1	1	1	2
Fair value hedge specific information: gains and losses on hedging instruments and on hedged items	1	1	2	1	1	1	1	2
Fair value calculation for financial instruments at amortized cost	N/P	1	2	1	1	1	1	1
Portfolio analysis with reference to concentration of risk (credit, interest rate, FX), by setting specific query	1	1	2	1	1	1	1	2
Maturity analysis for financial liabilities	1	1	2	1	1	1	1	1
Sensitivity analysis for each type of significant risk on financial instruments	1	1	2	1	1	1	1	1
Others:								
► Stress testing, what if simulation	N/P	N/P	N/P	N/P	1	N/P	N/P	N/P
► Value At Risk	N/P	N/P	N/P	N/P	N/P	N/P	1	N/P
Currency of created journal entries								
Real currency of the transaction	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Base currency of the legal entity owning the transaction	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
System-wide base currency	No	No	No	No	No	No	No	Yes
Optional (defined by the user)	No	No	Yes	No	Yes	Yes	Yes	Yes
Transfer level of information to accounting system								
Transaction level	Yes	No	No	Yes	Yes	No	No	Yes
Aggregated level	No	No	No	No	No	No	No	Yes
Optional (defined by the user)	No	Yes	Yes	No	No	Yes	Yes	Yes
Trade date accounting++								
	N/P	1	1	1	1	1	1	1
Audit trail of transaction, from deal entry to booking in general ledger								
Yes, with before and after images	N/A	Yes	Yes	No	No	No	Yes	Yes
Yes, as event list	N/A	No	No	Yes	Yes	Yes	No	Yes
Yes	N/A	No	No	Yes	No	No	No	No
No	No	No	No	No	No	No	No	No

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3	1	1	1	3	1	3	3
2	1	1	1	3	1	3	3
1	1	1	1	3	1	3	3
1	1	1	1	3	1	3	3
3	2	1	1	3	1	3	3
1	1	1	1	3	1	3	3
1	1	1	1	3	1	3	3
N/P	N/P	N/P	N/P	No	N/P	N/P	N/P
N/P	N/P	N/P	N/P	No	N/P	N/P	N/P
Yes	Yes	Yes	Yes	Yes	Yes	N/P	N/P
No	Yes	Yes	No	No	Yes	N/P	N/P
No	No	Yes	Yes	No	Yes	N/P	N/P
No	Yes	Yes	No	No	Yes	N/P	Yes
Yes	No	Yes	Yes	No	Yes	N/P	Yes
No	No	Yes	Yes	No	Yes	N/P	Yes
No	Yes	No	Yes	Yes	Yes	N/P	No
1	3	1	3	1	1	N/P	1
Yes	No	Yes	Yes	No	Yes	N/P	No
No	Yes	No	No	No	No	N/P	Yes
No	No	No	No	No	No	N/P	No
No	No	No	No	No	No	N/P	No

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Split VaR in components++	1	1	3	1	3	1	1	1
Input proprietary volatility/ correlation for VaR++	1	1	3	1	3	1	1	1
Presentation risk measurements								
Real time	Yes	Yes	No	No	No	Yes	No	Yes
Near real-time	No	No	Yes	No	No	Yes	Yes	No
Reports on user request	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Performance measurement								
Attribution analysis	No	Yes	Yes	No	No	Yes	Yes	Yes
Risk related performance ratios	No	Yes	Yes	Yes	Yes	Yes	No	Yes
User defined benchmarks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Calculate benchmark related performance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Functionalities regarding limits^^								
Maximum counterparty exposure	2	1	1	1	1	1	1	1
Maximum FX-exposure	2	1	2	1	1	1	1	1
Maximum gap per bucket	1	1	2	3	3	1	1	1
Maximum cumulative gap	1	1	2	3	3	1	2	1
Maximum duration	3	1	2	2	3	1	1	1
Maximum VaR	3	1	3	2	3	1	2	1
All of the above in any currency or aggregated to a currency of choice	1	1	1	3	1	1	2	1
The ability to define how exposures should be measured	3	3	2	3	3	1	1	1
Other:								
► Weighting linked to instrument and maturity	N/P	N/P	N/P	N/P	1	N/P	N/P	N/P
Calculate limits^^								
Per counterparty	1	1	1	1	1	1	1	1
Per currency	1	1	1	1	1	1	1	1
Per country	3	1	3	1	1	1	1	1
Per product	3	1	1	1	1	1	1	1
Per portfolio	3	1	1	1	1	1	1	1
Per trader	1	1	1	1	1	1	1	1
Expiration dates to specific limits++	1	1	1	1	1	1	1	2
End of day report on intra-day limit exceeding++	1	1	1	1	3	1	1	1
Generating curves by adding spreadcurves++	1	1	2	1	1	1	1	1
Override yield curve models++	1	1	1	1	3	1	1	1
What-if yield curves and volatility scenarios++	1	1	1	1	1	1	1	1

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1	3	1	3	3	1	3	3
2	3	1	3	3	1	3	3
Yes	No	No	No	N/P	Yes	No	N/P
No	Yes	No	No	N/P	Yes	No	N/P
No	Yes	Yes	Yes	N/P	Yes	Yes	N/P
Yes	No	No	No	No	No	No	No
No	No	No	No	No	No	No	No
No	Yes	Yes	Yes	Yes	Yes	No	No
Yes	Yes	Yes	Yes	Yes	Yes	No	No
1	1	2	1	3	1	3	1
1	1	2	3	3	1	3	1
2	2	2	3	3	2	3	2
2	2	2	3	3	2	3	2
3	2	2	3	3	2	3	3
3	3	3	3	3	1	3	3
1	1	N/P	3	3	2	3	1
2	1	N/P	1	3	1	3	2
N/P	N/P	N/P	N/P	N/P	N/P	N/P	N/P
1	1	2	1	3	1	3	1
1	2	2	1	3	1	3	1
1	1	2	3	3	1	3	1
1	1	2	3	1	1	3	1
1	2	2	3	3	1	3	1
1	2	2	3	3	1	3	1
1	1	1	1	3	1	3	3
1	1	1	1	3	1	3	3
3	1	1	1	3	1	3	1
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2	1	1	1	3	1	3	1

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Stress multiple risk factors++	1	1	1	1	1	1	1	2
Scenarios on level++	1	1	1	1	1	1	1	1
P&L calculations								
Accrual basis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mark-to-market basis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Distinction realized/unrealized result								
Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Functionality regarding reporting								
Built-in report writer++	1	1	1	1	1	1	1	1
Third-party report writers								
Crystal Reports	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Infomaker	Yes	No	N/P	N/P	Yes	Yes	N/P	Yes
Business Objects	Yes	No	N/P	Yes	Yes	Yes	N/P	Yes
White Light	Yes	No	N/P	N/P	No	Yes	N/P	Yes
Cognos	Yes	No	N/P	N/P	No	Yes	N/P	Yes
Kronos	Yes	No	N/P	N/P	No	Yes	N/P	Yes
Magnitude	Yes	No	N/P	N/P	No	Yes	N/P	Yes
Drill down functionality++	1	1	1	1	1	1	1	1
Write reports to files++	1	1	1	1	1	1	1	1
Support graphics++	1	1	1	1	1	1	1	1
Batch scheduler for running reports++	2	1	1	1	1	1	1	1
Example set of frequently used standard reports++	1	1	1	1	1	1	1	1
User defined reports++	1	1	1	1	1	1	1	1
Define and save own reports in detail								
Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Historical reports based on key figure dates++	1	1	1	1	1	1	1	1

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3	1	3	1	3	1	3	3
1	2	1	1	3	1	3	1
Yes	Yes	Yes	No	N/P	Yes	No	Yes
Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
1	1	1	3	1	1	1	1
Yes	No	No	No	No	Yes	Yes	Yes
N/P	No	N/P	No	No	Yes	N/P	N/P
Yes	No	N/P	No	No	Yes	Yes	N/P
Yes	No	N/P	No	No	Yes	Yes	N/P
N/P	No	N/P	No	No	Yes	N/P	N/P
Yes	No	N/P	No	No	Yes	N/P	N/P
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	2	1	1	1	1
1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
1	1	1	1	1	1	2	1

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Emma is a manager in the Financial Services Risk Management practice of Ernst & Young Financial Business Advisors SPA based in Milan, with seven years of experience in financial risk management and treasury processes and systems. Emma has been involved in various projects aimed at supporting and revising treasury activities and has consolidated skills, especially in interest rate, foreign exchange and liquidity risk management.



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EYG No. CK0358
0910-1102102 NY