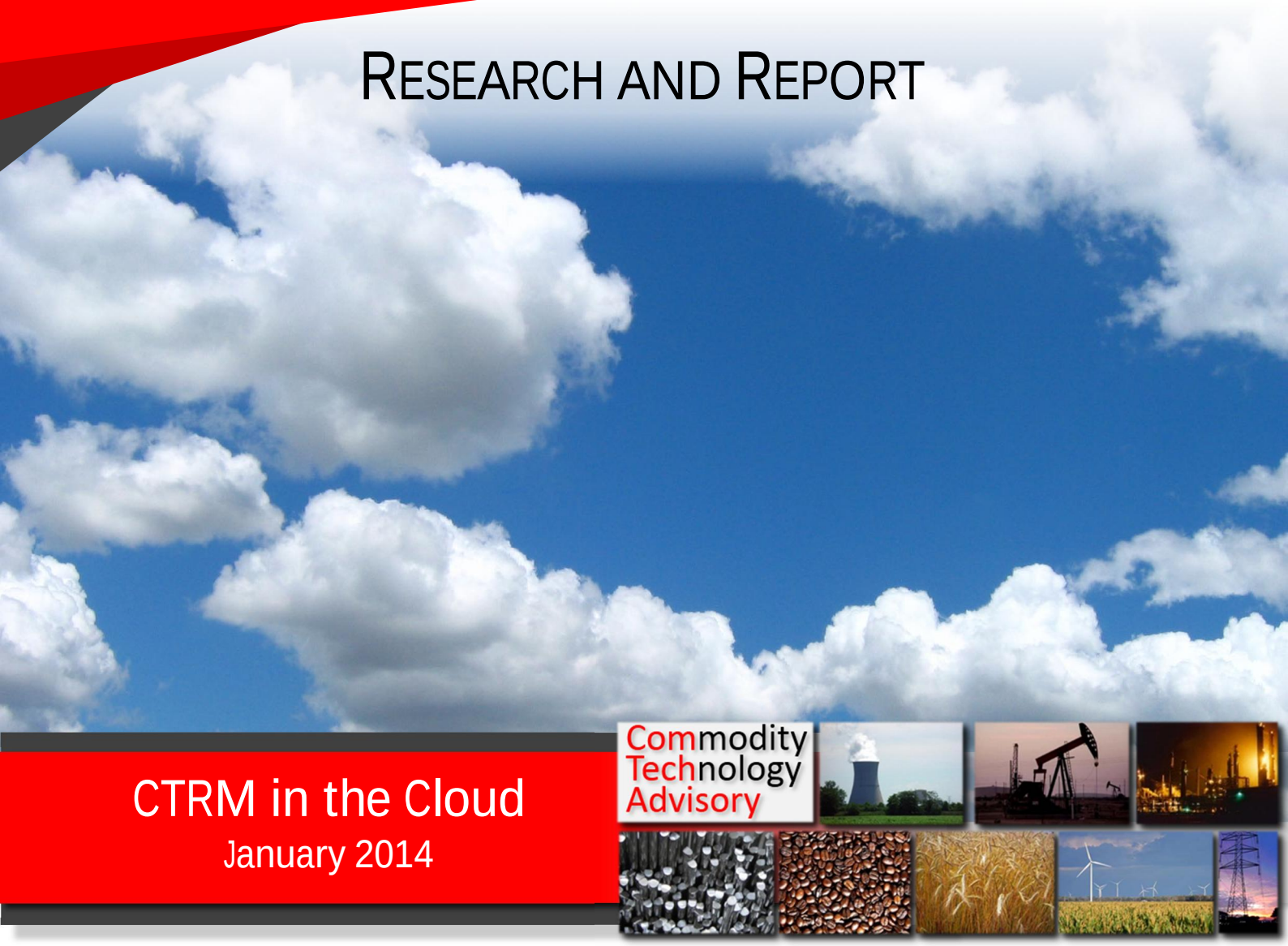
RESEARCH AND REPORT



CTRM in the Cloud

January 2014

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Aspect Enterprise Solutions
INTELLIGENT TRADE IN THE CLOUD

BRADY

generation10

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ComTechAdvisory.com

Contents

Executive Summary

The data generated by our survey of the industry suggests that, in general, Energy and/or Commodity Trading and Risk Management (E/CTRM) buyers are increasingly open to considering alternatives to traditional "on-premises" implementation models including both SaaS and hosted in the cloud delivery. While a small, but committed, minority continue to resist anything but the traditional on-premises implementation approach, the overwhelming majority of respondents will consider SaaS/hosted in the cloud for a variety of vertical application areas in and around commodity trading.

Despite that finding, only 16% of those who responded to the survey actually utilize a SaaS or hosted in the cloud E/CTRM solution, and while the data strongly suggests a great deal of interest in the cloud for E/CTRM, it does indicate that the final procurement decision isn't necessarily a slam-dunk in favor of the cloud. Though 54% of our respondents would consider a SaaS/hosted in the cloud alternative, there are indications that the final decision is still more likely to lean toward a traditional installation on-premises – at least for now. ComTech's forecast growth rates of 15% per year for SaaS/hosted in the cloud solutions do seem to be reasonable but may accelerate in the future if a sufficient numbers of trading firms adopt the model, are successful with it and are willing to advocate the approach to their peers in the industry. Overall, this finding is in agreement with broader studies such as those conducted by Gartner that found that interest in cloud-based solutions is primarily in horizontal applications such as accounting, HR or billing; and that as a result of buyer concerns around integration and ability to customize, the uptake of cloud-based vertical applications like CTRM lags somewhat.

Beyond a general softening of objections, the sluggish global economy appears to also be driving increased interest in cloud-based CTRM, as the potential for substantial cost savings for acquisition and implementation of cloud solutions (versus that for traditional software) is attractive in these times of substantial budget uncertainties. It should be noted, however, that E/CTRM vendors have shown an increasing willingness to compete on price and most, if not all, are willing to consider other price points and/or pricing models irrespective of the preferred delivery model; meaning that the delta in costs between Cloud CTRM and traditional CTRM is shrinking, at least for the time being.

Additionally, many vendors are seeking alternatives to the "lumpy" revenue stream associated with traditional license fees as investors are pressuring those companies' executives to produce more reliable and predictable earnings, such as the recurring annual revenues associated with the move to SaaS/hosted in the cloud solutions or other pricing mechanisms such as software leases. As such, these vendors will continue to push (via increased development and availability of cloud capabilities) for further adoption of non-traditional software delivery that will certainly have an impact on the growth of the space.

General perceptions of software delivery in the cloud have improved over the last few years. A majority of our respondents hold favorable or improved views of the model; almost certainly in part due to increasing exposure to Cloud-based products generally in both the consumer and commercial markets (including on-line exchange trading, on-line banking, CRM solutions and even iTunes).

However, most of the respondents agree as to what they view as the most pressing issues associated with cloud delivery. In particular, most do believe there are potential security issues, they worry about loss of control of their data, and many have concerns regarding technical integration with web-delivered software.

We believe the security issues related to the cloud may be somewhat overwrought. With the advent of on-line exchange trading, most companies today already have significant volumes of trade data "floating around in the cloud", and with new regulatory reporting requirements, that volume of trade data outside of a trading company's firewall will only increase. We do think there will be a continuing acclamation to, and acceptance of, cloud-based applications/data storage as web-based trading and reporting becomes even more common. That being said, we do believe that data security should be a critical concern to all users of E/CTRM systems, regardless of whether that data is in the cloud, in an in-house server room or sitting in a box on a trader's desk. Given the recent revelations regarding US federal electronic surveillance and the growing incidences of cybercrime around the globe, it's clear that no data store, in any location, is completely safe.

Integrating to cloud solutions is an issue that does need to be carefully considered by software buyers in this space. Given the nature of the trading business (one marked by rapid and frequent changes in business requirements) and the needs of trading companies to quickly react to new opportunities or challenges via the deployment of new systems or data feeds, tight programmatic integration with a core E/CTRM could certainly be a critical requirement. For many trading firms, these integration issues could be a showstopper to adoption, and concerns related to integration should be fully explored with any prospective cloud product supplier that may be under consideration.

Security access and data protection should also be carefully reviewed as part of the due diligence process during product selection, and experienced legal and technical advice should be obtained when reviewing the service level agreements (SLAs) that govern the commercial relationship with prospective vendors. Unfortunately, the industry doesn't have a long track record of experience in negotiating SLAs for cloud solutions; therefore, at least in the near term, greater effort and attention (than might be otherwise expected) is warranted in negotiating these critical agreements.

The research did confirm the presence of some widely held concerns related to web delivery of E/CTRM products, though generally those concerns have waned over the last couple of years. As market acceptance of cloud solutions continues to increase, and vendors continue to make the investments necessary to deploy their products via the web, ComTech believes the future for E/CTRM in the cloud will increasingly brighten.

Introduction

Beginning with the first deployments of commercially produced Energy and/or Commodity Trading and Risk Management (E/CTRM) software in the early 1990's, such systems have traditionally and primarily been implemented "on-premises", or in other words, installed and maintained on the user company's servers, within their firewall and under the full control of that company's IT staff. Commercially, this on-premises software is mostly licensed in perpetuity for a specific number of users and is supported (bug fixes, version upgrades) by the vendor under an annual support and maintenance agreement.

However, though such implementations are generally felt by the user companies to provide the most secure and safe environments for their critical business data, on-premises implementation are not without significant issues. They generally involve long, complex and expensive implementations that require months and potentially a year or more to complete. They also have a high potential for non-standard implementations (customizations) creating additional costs and complexity in version upgrades and there is significant and continuing costs and effort in maintaining the computing environments necessary to run the software (machines, networks, databases, operating systems, etc.).

Given these issues, it should not be surprising that alternative approaches to the traditional software model have arisen to provide a more cost effective solution for companies seeking E/CTRM capabilities without the inherent financial overhead of software acquisition and/or support. These alternatives, offered by either the traditional vendors, or by start-ups seeking to take advantage of growing awareness of the issues of "on-premises" solutions, have included alternative commercial agreements such as software leasing, offsite hosting of traditionally licensing software, and most recently, 'proper' Software as a Service (SaaS), hosted Cloud deployment. Early proponents of these alternative delivery methods were vendors like Sakonnet Technology (though the company is no longer in existence), Aspect Enterprise, SunGard Kiodex and OATI.

Despite the availability and willingness of vendors to provide their software using these alternative licensing or deployment methods prior to 2010 or so, these approaches were usually only utilized by:

- smaller companies seeking a cost-effective alternative to spreadsheets, or
- by larger firms that required a solution for a specialized need (such as eTagging), or
- by large firms that needed a "stop gap" solution while undertaking a strategic review of technologies or the deployment of a larger scale, traditional software solution.

There have also been the occasional early adopters of the SaaS or ASP model; but again, these buyers did tend to be the smaller companies with a limited scope of commercial activities.

In recent years, however, cloud solutions have gained in popularity as application development, web and other technologies have made it easier for vendors to deliver applications in the cloud, and as the cloud has become more secure. According to Gartner[1], the generalized SaaS software market was $14.5 billion in 2012 and it is forecast to reach $22.1 billion by 2015. ComTech Advisory[2] estimated the cloud-based CTRM market to be $33m in 2012 but growing rapidly by 15% per annum in subsequent years, versus an anticipated growth rate for traditional E/CTRM solutions of less than 5% for the same period.

An additional and important consideration when examining the growing adoption of Cloud-based products is the increasing push by the vendors themselves to not only find a wider market for their products, but to also address shareholder concerns regarding their companies' market valuations. As the vendors look toward an "end game" event (merger/acquisition or public stock offering), investors will place significant value on their ability to generate predictable recurring revenues. Given the "lumpy" and less predictable nature of traditional software licenses, vendors are increasingly looking to these non-traditional licensing models to better ensure their ability to grow market equity. In fact, given this pressure, and based on our conversations with executives across the vendor community, ComTech Advisory believes that virtually every software vendor in this space is currently planning or actively investing in technologies to better their ability to deploy their software via the internet.

[1] Forecast: Software as a Service, All Regions, 2010-2015, 1H12 Update, Gartner Report

[2] 2013 CTRM Global Market Size Report, Commodity Technology advisory Report

Given this anticipated shift, ComTech Advisory undertook this research effort and prepared this report to examine the trends and issues, as well as the potential business benefits of wider adoption, of cloud-based E/CTRM solutions.

Background

Despite some widely-held perceptions that E/CTRM in the cloud is a relatively new concept, it has in fact, been around for almost as long as the software category itself. Sungard Kiodex, OATI, Sakonnet Technology and Aspect Enterprise can all legitimately lay claim to having delivered cloud-based E/CTRM solutions over the last decade or longer. However, it's also fair to say that the vast majority of E/CTRM software (c. 80 - 90%) has been traditionally delivered on-premises.

Research by CommodityPoint[3] in 2010 into alternative delivery mechanisms for CTRM software found that 11% of all firms surveyed used E/CTRM solutions delivered on a SaaS basis. However, the study also identified two distinct groups of end users that it characterized as the 'Yes' and the 'No' groups, with the "Yes" group being those companies that would consider acquiring a SaaS solutions and the "No" group being those that said they would not consider such an acquisition. Amongst the 'Yes' group identified by the study, 48% said they might procure a new CTRM solution over the next 24-months. Of those, 25% suggested that they would only seek a SaaS or hosted solution while 84% would look at SaaS, hosted or leasing options along with traditional on site implementation. It concluded that, amongst the 'Yes' group, SaaS and other alternatively delivered CTRM software growth rates would likely be very high. Conversely, the 'No' group had a very high level of resistance to anything but traditional licensing and/or internal development and here, growth rates in the near future would be nil.

CommodityPoint characterized the two polar groups of companies that it identified in the study as follows:

The "No" group or those that *would not* consider a SaaS deployment

- Top and top middle tier companies who viewed their trading operations as strategic and/or their strategies and business processes as relatively unique and a competitive differentiator. These companies are concerned about controls (of both data and access) and wish to remain agile with an ability to add functionality in response to external and internal needs and developments.
- These included major Utilities, Producers, Petrochemicals, Merchants, large Banks and Funds who conducted deep and complex commodity trading operations on a regional or global basis.
- Such companies also had larger IT departments and budgets.

The "Yes" group or those that *would* consider a SaaS deployment

- In most industry segments these were bottom tier and lower middle tier entities from a TRM perspective including but not limited to,
  - Regional banks and most Commodity trading funds/CTAs
  - Local Utilities, Producers and Petrochemical companies
  - C&I end users such as Airlines, Transportation and other fuel users.
- Generally, they had limited IT resources and budgets.
- Either they had exposure to commodities and engaged in hedging to reduce exposure, or they were commodity traders that had little or no appetite for investing in IT infrastructure.
- They had fewer concerns about having control over data and application access and deemed their business processes to be largely generic.

The CommodityPoint report saw demand for SaaS and other alternatively delivered CTRM solutions in a number of different categories including:

- The 'Yes' group generally driven by the need to move off spreadsheets as a result of a greater emphasis on risk management, regulations, reporting and so on, or
- As a temporary solution, either in the case of a start-up, or new business unit or, where an existing trader enters a new commodity and needs a solution immediately.

[3] Alternative Delivery Mechanisms for CTRM Software, CommodityPoint Report, 2010

Finally, the study also suggested that most of the respondents (and perhaps reflective of the industry at large) were largely unaware of which software vendors actually offered SaaS solutions, hinting perhaps that lack of familiarity with those vendors and the SaaS model in general was also dampening broader demand.

However, since 2010, much has changed in energy and commodities trading industries. There has been a general and pervasive increase in rules and regulations - so much so that some banks have exited the business altogether, significantly curtailed their commodity trading activities or have shifted the emphasis of those trading activities to Asia. There has been a more or less continual global recession, with Europe being particularly hard it, which has had an impact on technology expenditures and budgets across the board, at the very time when regulatory compliance costs have increased. On the other hand, there has been something of a boom in Asia, and in agricultural and soft commodities markets in terms of trading and supply chain management, necessitating increased investment in CTRM and CTRM-related solutions. Overall, increased cost pressures and declining margins; combined with a continual need to add and improve functionality (particularly in the areas of risk management and regulatory compliance) has exerted downward pressure on software license and implementation costs in some markets.

Meanwhile, the general popularity of SaaS software, and the lower total cost of ownership (TCO) of such solutions, has caught the attention of many IT leaders in the commodities trading industry. Numerous vendors have progressively worked to migrate their software architecture to service oriented architectures with web-enabled user interfaces; while a number of start-up vendors have adopted these newer technologies and the SaaS model from inception. Though almost every vendor of CTRM software will provide either non-traditional or on premises licensing of its E/CTRM software if asked, few, can actually deliver a true SaaS solution.

Models and Confusion?

The CommodityPoint study found many buyers didn't know which vendors offered cloud deployed CTRM solutions, and it also implied that there was confusion over what the term really means and the benefits and pitfalls of the model. For instance, screen scraping a CTRM application and offering access via Citrix is not cloud; however, it is a generally accepted method for delivery of software via the internet. To avoid confusion, let us define our terms…

Software as a Service (SaaS)

Gartner defines software as a service (SaaS) as software that is owned, delivered and managed remotely by one or more providers. The provider delivers software based on one set of common code and data definitions that is consumed in a one-to-many model by all contracted customers at any time on a pay-for-use basis, or as a subscription based on use metrics.[4]

SaaS software can reside in the cloud – either the public cloud or a private cloud. A strict definition would imply that all users use the same software application/database and that each different user company's data is identified and labelled to ensure that it is only available to properly authorized users from that company. This is often referred to as multi-tenanted. For the purposes of this report, and as noted below, we will refer to single-tenanted SaaS as 'hosted'.

The Cloud

CIO.com offers this definition: "Cloud computing is computing model, not a technology. In this model of computing, all the servers, networks, applications and other elements related to data centers are made available to IT and end users via the Internet, in a way that allows IT to buy only the type and amount of computing services that they need. The cloud model differs from traditional outsourcers in that customers don't hand over their own IT resources to be managed. Instead they plug into the "cloud" for infrastructure services, platform (operating system) services, or software services (such as SaaS apps), treating the "cloud" much as they would an internal data center or computer providing the same functions." [5]

Note that the cloud is the infrastructure and NOT the business applications. Additionally, within the "Cloud" category, there are two sub-categories:

[4] http://www.gartner.com/it-glossary/software-as-a-service-saas/

[5] http://www.cio.com/article/501814/Cloud_Computing_Definitions_and_Solutions

Public Cloud

A public cloud is a set of computers and computer network resources based on the standard cloud-computing model, in which a service provider makes resources, such as applications and storage, available to the public over the Internet. Public cloud services may be free or offered on a pay-per-usage model.

There are a growing number of global scale service providers (like Amazon, Microsoft or Google) who own all infrastructures at their data center, as well as Cloud Brokers who aggregate infrastructure from multiple providers.[6]

Private Cloud

Private cloud is cloud infrastructure operated solely for a single organization, whether managed internally or by a third party, and located internally or externally at a third party datacenter. Undertaking a private cloud project requires a significant level of engagement to virtualize the business environment, and requires the organization to reevaluate decisions about existing resources. When done right, deploying a private cloud can add value, but every step in the project raises security issues that must be addressed to prevent serious vulnerabilities. Private clouds have attracted criticism because users "still have to buy, build, and manage them" and thus do not benefit from less hands-on management, essentially "[lacking] the economic model that makes cloud computing such an intriguing concept".[7]

Hosted

Hosted software refers to software that is installed, hosted and accessed entirely from a remote server or location. While the term "hosted" is sometimes used synonymously with SaaS, we use it to mean single-tenanted SaaS in which the client company is using its own instance of the application exclusively and accessing it via the internet.

Application Service Provider (ASP)

In an ASP environment, the application software resides on an IT infrastructure that is owned or managed by the software vendor and is accessed by licensed users through a web browser using HTML, or by special purpose software provided by the vendor and residing on the users computers. Custom client software can interface to these systems via XML APIs, providing integration with the clients' in-house systems. ASPs may or may not use multi-tenancy in the deployment of their software; some ASPs offer an instance or license to each customer (for example using Virtualization), some deploy in a single instance multi-tenant access mode, now more frequently referred to as "SaaS".

Leased

A commercial model, not specific to the method of software deployment, whereby the use of the application software is paid for through periodic lease payments (generally monthly or annually). The software may actually be delivered traditionally on-premises, hosted or SaaS. The lease fees are calculated based on any number of formulae such as per user, per instance and so on.

[6] http://en.wikipedia.org/wiki/Public_cloud

[7] http://en.wikipedia.org/wiki/Cloud_computing

Classifying the Models

In fact, there are almost any number of modes of delivery ranging from full multi-tenanted SaaS in the cloud through to the traditional on premises installation model. It helps to classify the delivery using three components:

1. Who is managing the hardware that the software is installed on?
   a. Managed by the user company on-premises, or
   b. Managed by the vendor via hosted or SaaS, or
   c. Managed by a third-party who provides cloud or infrastructure services, whether private or public.
2. Is the same instance of the application software and database used by a single party or by multiple parties (single versus multi-tenanted)?
3. How is the software paid for?
   a. Traditional perpetual license fee, with a one-time implementation and annual support & maintenance fees, or
   b. Limited duration license fees, one-time implementation and annual support & maintenance, meaning continued use of the software beyond the licensed period will incur more license fees, or
   c. An all-in fee, usually on a per user basis, and that may also be for a period of time (annual, every 5-years etc.) that covers license, implementation and support & maintenance, or
   d. A subscription or lease agreement under which access to the software is provided for a periodic fee per user or group of users.

As previously noted, almost all vendors when requested, will offer some flavor of what they term 'SaaS', which may be the cause of some market confusion as the term 'SaaS' is used to describe many models, most of which would not fit the generally accepted definition of "SaaS". For example, a vendor that allows a user company access to its application via Citrix is not offering SaaS, but a private access, hosted application installation at its own site (or via a third party server) accessible over the internet. This is extremely important to understand, as the business case in terms of benefits, pitfalls and costs is likely to be radically different.

For the purposes of this study, ComTech Advisory uses the term 'SaaS' only to mean software provided in a multi-tenanted environment in the cloud, irrespective of any commercial agreements around license or support fees. We use the term 'hosted' to designate a single-tenanted, in the cloud environment, again irrespective of the commercial terms related to the usage of the software.

The Survey Results

Demographics

The survey component of this study commenced on September 3, 2013 using a surveymonkey.com tool, and completed on December 30, 2013. To encourage responses, ComTech Advisory used email requests, direct calling, articles, and website advertising to drive responses. Additionally, we asked the CTRM vendor community to solicit responses from their clients. In all, we collected some 80 responses but eliminated 13 of those responses as invalid, leaving 67 usable responses. The invalid responses were received from individuals employed by software vendors (who may have a vested interest in influencing the outcome of the research), or were responses that had missing or bad email addresses that prevented validation of the identity of the respondent. In addition to end-users, we did allow *bone fide* consultants and systems integrators to respond as, in this instance, they are market influencers and their views are therefore important.

Individuals within the following companies responded to the survey:

Sage Petroleum Limited
BP
Alimar Corporation
Master Chem Oil
ACES Power Marketing
Birmingham Science Park Aston
Manila Electric Company
Blue Ocean Trading Services
E.On
Good Energy
InterGen
Haven Power
Ovo energy
Electricity Supply Board
BRASKEM International
MRE Consulting
Hoogwegt Groep BV
Brookfield Renewable Power
Accenture Services Private Limited
ESP Consulting
Sapient global markets
UPBO
Engen
Suncor Energy
Platinion GmbH
PSEG
Deloitte
BRASKEM International
Macquarie
Shell Trading
MAG Commodities
Magnasea Capital Inv.
Eneco Energy Trade
Encana Corporation
LITASCO SA
Direct Energy
Grupa LOTOS S.A.
Principia Consulting
Statkraft
ETRM-Pro Consulting LLC
Ambrian
Lit-Invest
PS Trading SA
Valprime
Alstom
Klesch and Co.
Heineken
Trade Finance Agency Services
Sky Group. Colombia.
Advantergy LLC
fcm360
City of Anaheim
HCS
VTB Capital
Cerium Technology
BAML
Big Data Think Analytics
Mocoh
Gazprom Marketing & Trade

The largest respondent groups were from the Utility, Merchant/Trader, Oil & Gas Producer, and Consultants/SI's segments, as noted in Figure 1. The distribution of types of company represented in the survey appears to be appropriate for a survey of this type.

About half of the respondents originated in Europe, slightly more than a third in North American and the remainder from the rest of the world, of which 7% were located in Asia (*Figure 2*). Interestingly, this is the first survey that we have conducted where there was a greater number of respondents located in Europe than North America. This result may, in fact, be indicative of more interest in SaaS and hosted in the cloud E/CTRM in Europe as that region does appear to have a higher ratio of SaaS versus on-premises deployments than in the US

Figure 1: Survey Demographics – Type of Respondent

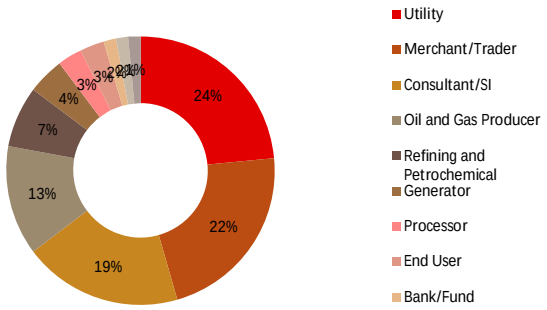
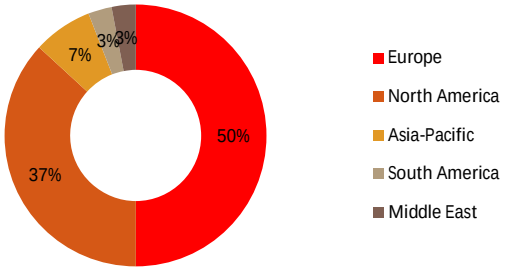


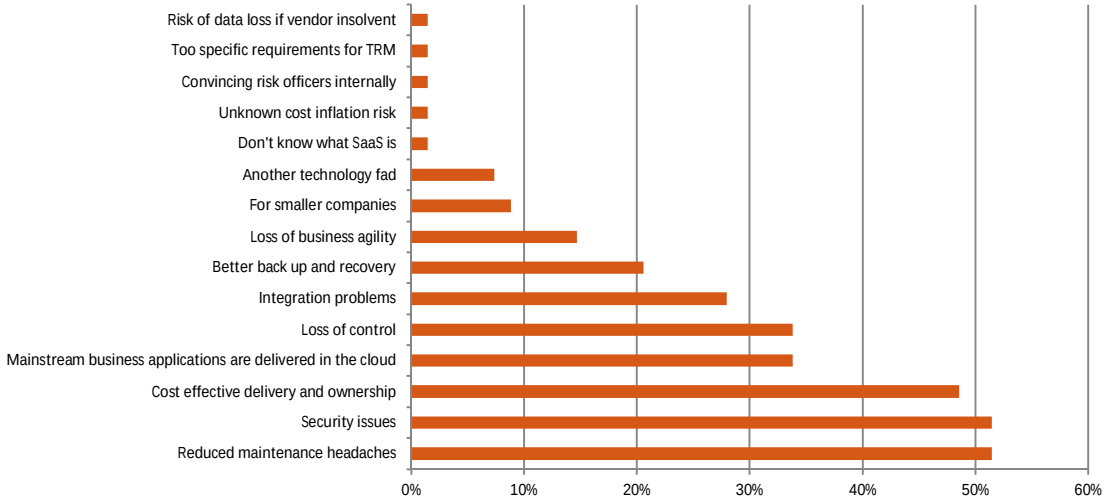
Figure 2: Survey Demographics – Location of Respondents



Results

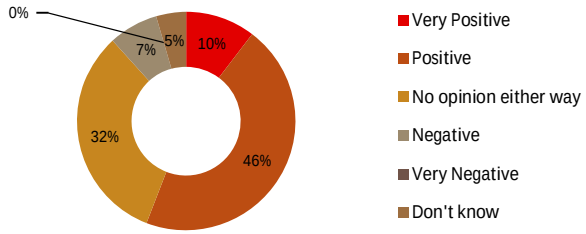
Our respondents' perceptions of the characteristics, advantages and disadvantages of SaaS and the cloud present rather a mixed bag. On a positive note, many agreed that it meant reduced maintenance headaches (52% of respondents) and more cost effective delivery and ownership; however, a slight majority (52%) also felt that such deployments also brought with them security issues. They felt less strongly about other characteristics of SaaS and the cloud however, with 34% agreeing with the observation that mainstream business applications are now delivered in the cloud. Less than a third of the respondents agreed that there were issues related to "loss of control" and technical integration with SaaS and the cloud. About 21% felt that improved backup and recovery was a benefit. A relatively small number of respondents, 15%, felt these deployment methods led to a loss of business agility, and even less (fewer than 10%) believed these types of implementations were generally only for smaller companies. An even smaller number felt SaaS is just another technology fad that will eventually fade away (*Figure 3*).

Figure 3: Perceptions of SaaS and the Cloud



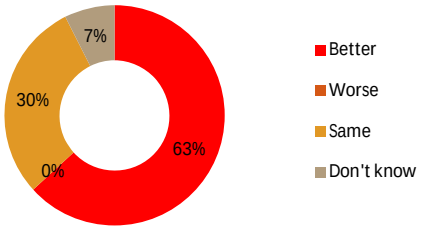
Overall, the respondents seemed to have a balanced view of SaaS and the cloud, finding both positives and negatives, but not harboring overly strong feelings about any of them. Clearly, the largest benefits are seen to be around reduced costs and reduced maintenance headaches; and the biggest pitfall to be related to security.

Figure 4: Perceptions of the Cloud



This observation is strengthened by the generally favorable view of SaaS and the cloud among the survey respondents. More than half had positive views, around a third had no opinion either way and only 7% had a negative opinion of SaaS and the cloud (Figure 4). The overall impression of SaaS and the cloud has improved over the last two years with 63% stating that their opinions had improved and none saying their opinions had worsened over the period (Figure 5). To some extent, this is almost certainly due to the increasing familiarity and growing acceptance of the cloud and SaaS delivery models in other areas of business and personal use (such as banking applications for example). This has

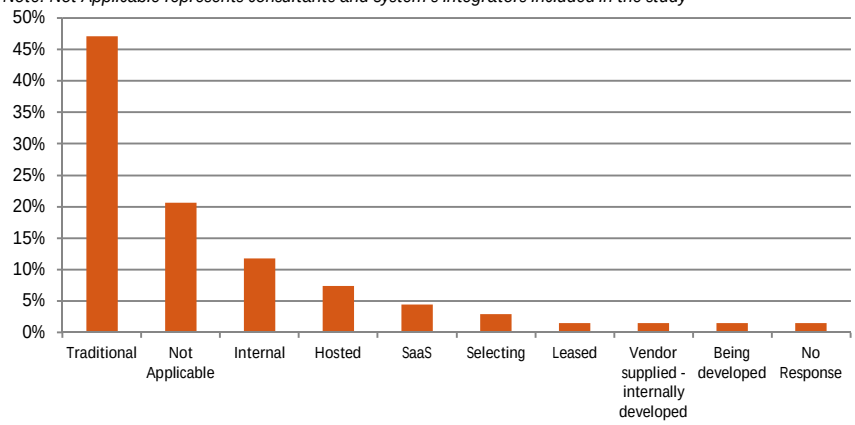
Figure 5: How Perception Has Changed



led to a more sympathetic overall view to the idea and concepts behind the cloud and SaaS as a delivery model for E/CTRM software.

However, when it comes to E/CTRM software currently installed at and in use by the respondents companies, we see a continuation of the legacy of the last 15+ years in which traditional on-premises installations have been by far more common. Some 77% of the end user respondents identified their E/CTRM solution as a traditional on-premises installation, are utilizing internally developed systems (or are currently developing such a solution), or some combination of the two (Figure 6). Of the rest, only 10% use a hosted solution, 6% utilize a SaaS solution and even fewer use leased software.

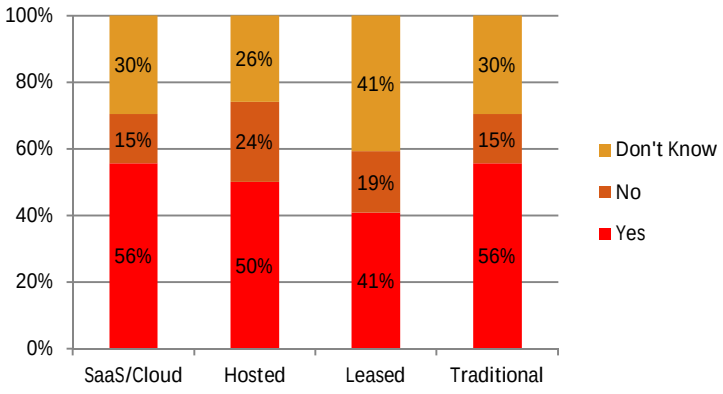
Figure 6: Disposition of Currently Used CTRM Solutions
Note: Not Applicable represents consultants and System's integrators included in the study



Interestingly, when asked if they would consider procuring an E/CTRM software solution in the future via the various deployment methods (SaaS, Hosted, Leased and/or Traditional on-premises), there was little variation. The least likely option was leasing, while SaaS/Cloud was essentially tied with Traditional as the most likely delivery models (Figure 7).

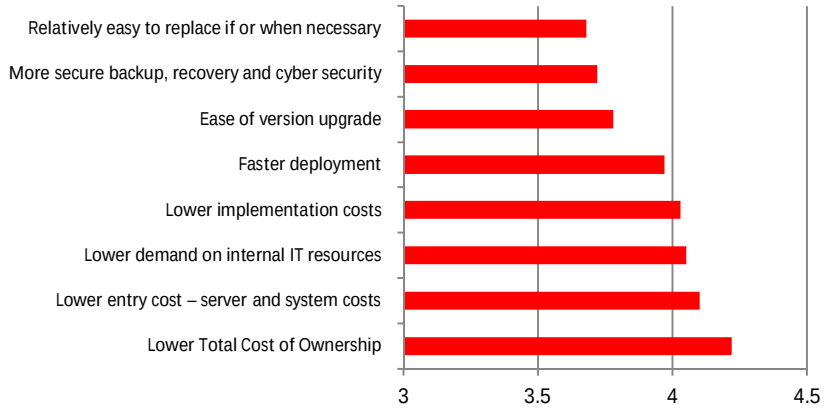
The results suggest that the penchant for traditional on-premises installations for E/CTRM software may be giving away to the cloud and that the future is perhaps rather more even, with the vast majority of buyers open to looking at alternatives to the traditional method of deploying E/CTRM software. This appears to be a significant change over the results of the CommodityPoint survey conducted just 3 years ago and potentially represents a sea change in attitudes.

Figure 7: How Would Respondents Procure Their Next CTRM Solution?



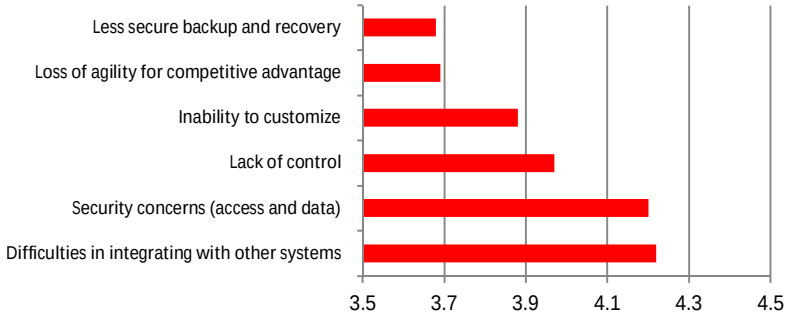
So what are the perceived benefits that the respondents associate with SaaS/cloud deployment? We asked the respondents to rank a number of potential benefits and pitfalls on a scale of 1 to 5 where five represented strong agreement, one strong disagreement and 3 being neutral or average. In general, the respondents ranked all potential benefits of cloud deployment of CTRM higher than average but they particularly believed that lower total cost of ownership is a strong benefit. In fact, the anticipated lower costs of cloud deployment were the most highly ranked attributes across the board, with lower entry costs and lower demand on IT resources, and lower implementation costs filling the top four spots. The lowest ranked benefits were that CTRM deployed via the cloud would be easier to replace and would provide a more secure backup and recovery and improve cyber security (*Figure 8*).

Figure 8: Perception of Benefits of SaaS and the Cloud



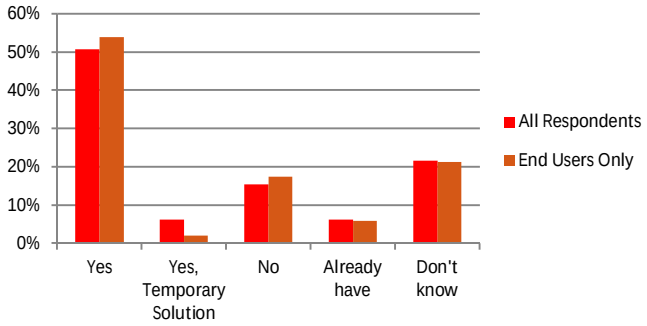
In reviewing potential pitfalls of SaaS and the cloud, the respondents were most focused on integration difficulties and security issues although, when it comes to security, the main challenge seems to be about security of access and data security as opposed to backup and recovery. As with the benefits, all of the potential pitfalls were ranked above average (*Figure 9*).

Figure 9: Pitfalls of SaaS and the Cloud



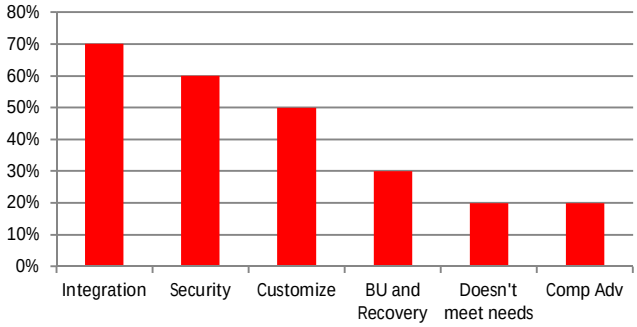
In the CommodityPoint study, the authors perceived a lack of "strength of conviction" in the responses to a set of similar questions, prompting a closer look at the data. Both the potential benefits and pitfalls of the cloud deployment model were all ranked around 'average' in that study, but closer inspection of the data demonstrated the existence of two discrete groups of respondents - those strongly for and those strongly against E/CTRM in the cloud, with these two groups' responses more or less cancelled each other out. This resulted in the recognition of the 'Yes' and 'No' groups previously discussed. In this survey, no such dichotomy of responses is observed; in fact, rather than there being a 'Yes' and a 'No' group, the majority appears to be strongly interested in cloud delivery models. We do believe this is a significant change in a short period of time.

Figure 10: Would Respondents procure their Next CTRM Software in the Cloud?



This latter statement is supported by the responses to the next question that asked if they would consider SaaS/cloud when selecting a new E/CTRM solution (Figure 10). About half (51% of all respondents and 54% of all end users) said that they would consider a SaaS/cloud solution for their next system, while only a small minority would not consider SaaS/cloud options (16% of all respondents and 18% of end users). Slightly more than 20% of the respondents in either category indicated they did not know. In total, the number that said they would consider SaaS/cloud (even if only for a temporary solution) combined with those that have already deployed one yields a fairly good majority (62% of all respondents and 61% of all end users). In comparison to CommodityPoint's results of just three years ago, it does seems that SaaS and the cloud have now truly arrived in commodity trading.

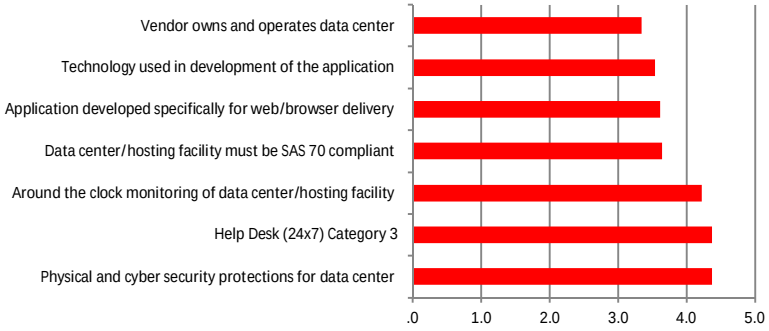
Figure 11: Why Wouldn't You Procure CTRM in the Cloud?



Having said that, there is still a hint of fierce resistance among those that said 'no' to the potential of deploying a SaaS/cloud E/CTRM solutions - mostly the same respondents who indicated that they believe it to be a technology fad that will go away in time. In this survey however, the 'No' group is a small minority of less than 20% of the total sample. This 'No' group cite security and integration issues with SaaS/Cloud and concerns over the ability to customize (Figure 11) as reasons not to deploy such a solution.

The survey also asked the respondents to rank the importance of a number of attributes of SaaS or hosted in the cloud delivery on a scale of 1 to 5 (where 5 is very important and 1 is unimportant). Three attributes were ranked as 'important' (greater than an average score of 4) and the remainder ranked somewhere between 'average' and 'important'. The attribute ranked as most important as the physical and cyber security protections for the data canter. The help desk function and having around the clock monitoring of the data center or hosting facility was also believed to be important. Vendor ownership or operatorship of the data center was seen as the least

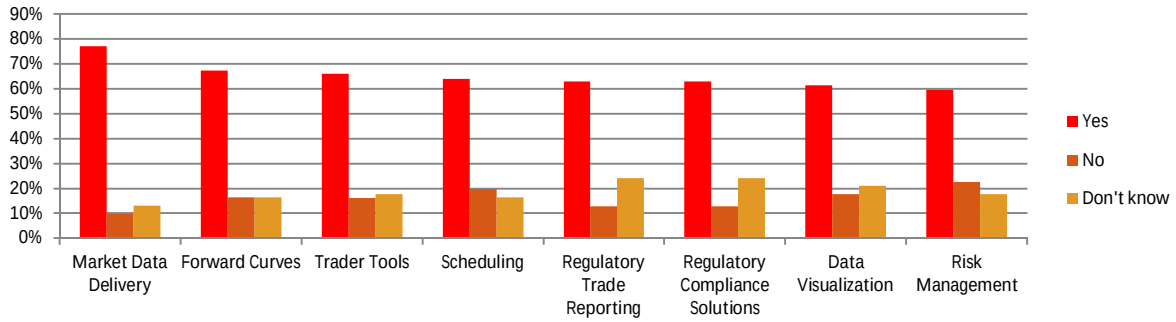
Figure 12: Attributes of SaaS/Cloud for CTRM



important attribute in our respondents minds (Figure 12). The ranking of security and monitoring of the data center as being more important than the technology or architecture of the E/CTRM software being deployed in a SaaS or hosted in the cloud environment is interesting. ComTech would probably rank the appropriateness of the technology and application for SaaS or hosted in the cloud delivery as significantly fundamentally more important than security of the data center for reasons that will be discussed later in this report.

The general acceptance of the SaaS/hosted in the cloud model is noted again when we asked which in functional

Figure 13: What Other Functional Areas Would You Consider SaaS For?



areas our respondents would consider deploying a SaaS/cloud solution. The vast majority would consider SaaS/Cloud for all of the application areas tested, and those saying 'No' to any were around 20% or less of the respondents. Even critical functional capabilities such as risk management, scheduling and market data delivery would be considered for a SaaS/cloud solution (Figure 13).

Procurement Plans

This survey provided an opportunity to test future demand for E/CTRM products. Demand for new systems (Figure 14a) does appear to be down with those indicating that they will procure a new solution over the next 12 to 24 months being at 31% (low by comparison with surveys from previous years). However, there is some uncertainty with 18% not knowing if they will procure or not during the next 24 months. About 50% say that they have no plans to buy new E/CTRM software in the next 2-years.

The vast majority of those respondents that indicated they did plan to procure new E/CTRM software over the next 24-months will be looking for ETRM (energy) systems (Figure 14b).

The responses indicate that there is a very fair chance that those planning to buy will deploy a SaaS solution (Figure 14c). None of the respondents said that their new system would be internally built, hosted or leased. All indicated that it would be vendor-supplied and delivered either on premises or via SaaS. The 'other' category comprises those who have yet to decide between traditional or SaaS or hosted in the main. A couple of the respondents did cite a preference for SaaS, but also indicated there may be issues getting approval for such a deployment from their companies' risk and/or executive management. We do believe this is an important observation and that such potential objections will likely continue to factor in many procurement decisions despite the

Figure 14a: Do you plan on purchasing a new CTRM solution?

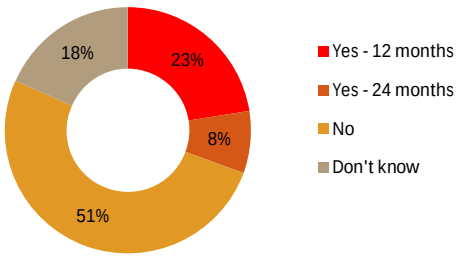


Figure 14b: If yes, for what commodities?

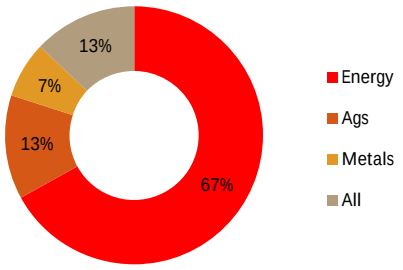
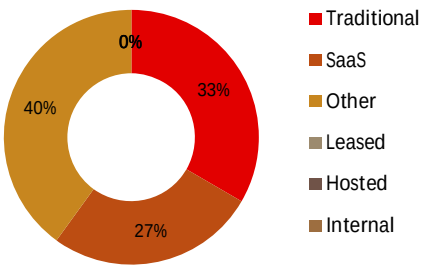


Figure 14c: On What Basis?

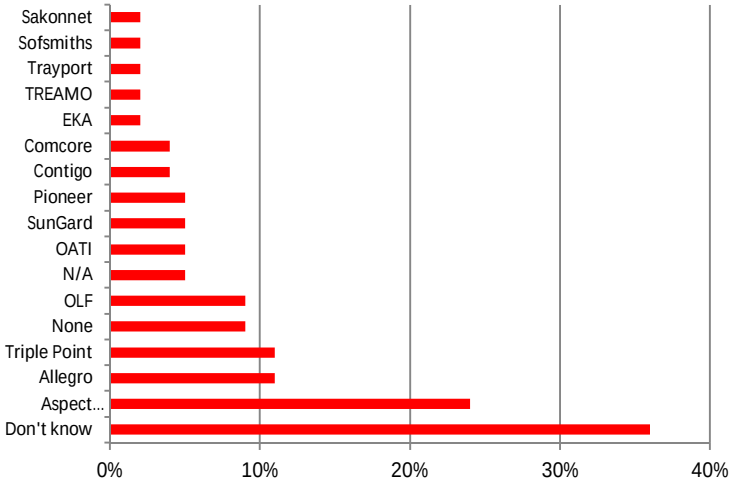


increasing openness to the SaaS/hosted model by individuals within the organization.

Who Supplies E/CTRM in the Cloud?

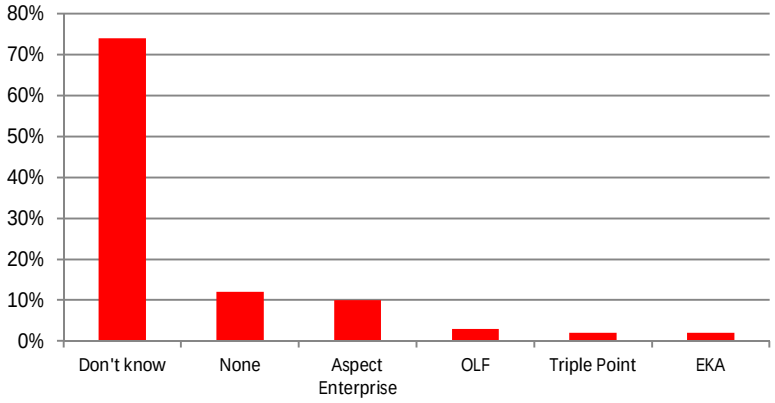
Given the apparent willingness of our respondents to engage a SaaS/Cloud vendor in procuring a E/CTRM solution, it's interesting to see the responses when our respondents were asked which companies supplied SaaS or hosted in the cloud E/CTRM solutions (Figure 15). About a third didn't know and a further 10% believed that there were no companies that provide SaaS/hosted in the cloud E/CTRM solutions. Of those that could name a vendor of SaaS/Cloud in the cloud software for this market, Aspect Enterprise was the most widely cited.

Figure 15: Who Supplies CTRM in the Cloud?



This overall lack of knowledge about available solutions also spills over into perceptions of market leadership. Our respondents overwhelmingly indicated that no vendor has a strong leadership perception and of the four that were named as leaders in the space, it is debatable whether two of them could even offer true SaaS E/CTRM, offering instead hosted solutions. Bottom line, the vast majority of the respondents (and most likely the broader market) simply do not know who the market leader is in this category of software.

Figure 16: Who is the Market Leader?



Discussion of Results

The first thing to notice about this survey is that European responses outnumber North American responses. As previously mentioned, this is a first in global research projects with which we've been associated, and it may be relevant in terms of future adoption of SaaS/Cloud CTRM products. Could it be that Europeans are more amenable to SaaS/cloud for E/CTRM deployment than North Americans? While there is not enough evidence in our study to be able to make a firm conclusion, it is true that fully 50% of our respondents that indicated they would not be willing to procure an E/CTRM solution via the cloud are based in North America. Given this high negative, it could be an indication that CTRM in the cloud is not as interesting in North America as elsewhere, but it is just a hint and cannot be statistically proven through our data.

The Gartner study[8] found that the reasons companies might choose to not deploy applications (generalized and not specific to E/CTRM) via a SaaS model actually varied by geography. According to Gartner, limited flexibility of customization and limited integration to existing systems were the primary reasons in North America. In EMEA, network instability was the issue most frequently encountered, whereas longer-than-expected deployments were the top issue in Asia/Pacific.

Growing Acceptance

In comparison to previous surveys, the idea of procuring an E/CTRM solution delivered as SaaS or hosted in the cloud seems to be a much more acceptable alternative to our respondents. Those that said 'no' are significantly less numerous (less than 20%), but they appear to be entrenched in their opinions, scoring SaaS/hosted lower than the traditional on-premises delivery across almost every characteristic or attribute tested. Other than the fact that 50% of these 'no' respondents are located in North America, there is no other observable pattern or demographic differences evident in the data…they do not necessarily seem to represent larger trading firms, for example. They are simply a vocal minority that feel very strongly that E/CTRM software needs to be delivered on-premises within the confines of their companies' IT infrastructure.

Despite the increased willingness to consider SaaS and hosted in the cloud delivery as an option, there are indications in the results that the issue is still not yet fully decided, as a couple of the respondents did provide comments regarding the need to convince their management, or risk management group, as to the acceptability of these deployment methods. Further, several of the respondents noted that they were undecided about how to proceed in terms of making an actual procurement decision, meaning they could fall either way when it came time to make that decision. Though not necessarily explicit in the results, we do feel that there is a sense that for the majority of potential buyers, anything but traditional on-premises deployment could still be seen as a potentially risky decision internally. Nonetheless, the pendulum of acceptance for CTRM via the cloud does certainly appear to be swinging. However, given the inability of our respondents to identify vendors of these solutions (much less leaders), it's clear that those vendors that want to compete in this space need to better educate the market and provide some visible success stories.

[8] *Forecast: Software as a Service, All Regions, 2010-2015, 1H12 Update. Gartner 2012 report.*

Need for Education

The need for market education is clearly borne out in the results. Few respondents know which vendors offer SaaS or hosted solutions in the cloud, though several believe that the usual suspects, the top five vendors, must do so, even though by strict (and in some instances – loose) definitions, they do not. Virtually no one has a firm opinion about who is the market leader. This is despite the fact that vendors like Aspect Enterprise, SunGard Kiodex and OATI have all successfully offered SaaS/hosted in the cloud solutions for more than a decade already. This need for more market education is indicated throughout the survey results, with perceptions that security, for example, is a serious issue – a showstopper - while technology and development approach are not as major an issue; views that may in fact be misplaces (as we will discuss later in this report).

For the last several years, the ranks of cloud computing providers have been growing as the established suppliers of SaaS/hosted in the cloud solutions have been joined by a number of recently-founded companies, or by a few of the "traditional" vendors that have made significant investment in "cloud enabling" their products. Today, vendors like Trayport Contigo, Agiboo, Allegro, Generation 10, EKA, Brady PLC, ComFin (ComCore), Calvus Solutions, Molecule Software, and VuePoint Solutions – to name a few – all offer web-based delivery options for their E/CTRM software, including several that have designed and built their software explicitly for delivery in the cloud. In fact, almost all vendors will offer some form of hosted solution. It's also interesting to note that as evidence of the growing market for cloud-based products in this space, every single European provider of regulatory reporting tools and products for EMIR and REMIT has developed and deployed those in the cloud[9].

Business Pressures Promoting the Model?

Cloud delivery methods have caught on rapidly across a number of mainstream business applications. The rapid emergence of SaaS and hosted in the cloud deployment options generally has also had an impact in the world of E/CTRM. Here, especially recently, the high costs associated with traditional on-premises software has become an issue for the small and mid-sized companies that now need structured trading solutions to address the requirements of emerging regulation, shareholder demands, or credit rating agencies.

The general acceptance of the model, the emergence of newer E/CTRM vendors using technology as a differentiator, and the cost pressures faced by many commodities trading businesses, have all combined to help increase the acceptability of SaaS/hosted in the cloud deployment of E/CTRM software. Based on our research, it now appears that around 80% of companies will consider cloud-deployed solutions a viable option. This is driven in no small part by a compelling business case that makes cloud a necessary consideration to examine during the procurement process.

Not only is it recognized that procuring E/CTRM as a service may be more cost effective, there is also a growing acknowledgement that the model simply works. The survey results demonstrate more or less convincingly that the business case (at least as the cost model is concerned) is well understood. What does seem to continue to stand in the way of more wide-scale deployment are a number of potential pitfalls and concerns; most notably, security concerns (including application access and data integrity) and issues related to integration with other systems.

Security and other concerns

In reality, it is quite possible that security of a traditional on-premises installation is more difficult to guarantee than that of an application (and its data) held off-site at a facility by a specialty provider. Many technology experts argue that it is a misconception to believe that any single company can have better IT security than that provided by a specialized data center set up specifically for the purpose of hosting other people's applications and data (especially when that includes backup and recovery).

Unfortunately, the recent revelations by Edward Snowden regarding NSA spying have increased global concerns around cyber security. The Information Technology & Innovation Foundation[10] has already recently suggested that the US cloud industry could lose between $22 and $25 billion over the next years as companies look to remove their data from US-based servers to decrease their exposures to potential NSA access. The main issue is that the cloud-based SaaS or hosting provider must actually 'see' the data in order to do something useful with it and that is when a rogue employee, hacker or government agency might step in and get a copy of it. To address

[9] *European Commodity Market Regulations: Implementation, Impacts and Solutions. Commodity Technology advisory Report, 2013*

[10] *How Much Will PRISM Cost the IT Industry. ITIF, August 2103 Report, http://www2.itif.org/2013-cloud-computing-costs.pdf*

this issue, the industry is already coming up with new security solutions for the cloud that includes on premises proxies and gateways that encrypt or tokenize the data before it goes out.

When it comes to security, there are no absolute guarantees. Any trading firm's IT department can have disgruntled employees or can be hacked by a determined and skilled cybercriminal. Every computer system is vulnerable and each and every point of vulnerability needs to be constantly reviewed and guarded against. At the end of the day, data security is as much an issue of access control as it is anything else - the idea is to manage the risk of a security breach using the highest level of access security possible for the most sensitive data.

The NSA issue has led to the perception that public clouds are less secure than private clouds; however, private clouds are just as vulnerable to court orders and legal requirements when it comes to the PATRIOT Act and/or privacy laws in various countries around the globe.

For global scale companies or those that wish to relocate their data to a different geography, the variations of privacy laws can create issues. For example, access to and sharing of EU citizen's personal data is tightly controlled including requirements for notification of data releases. In the US, while data laws are significantly more flexible, frameworks still exist, meaning European firms must also comply with US law if they are operating within the US jurisdiction. Where the data is collected and stored can be a huge issue, as many non-US customers don't want their data brought into the US (and have it potentially exposed to government surveillance), but storing it in the wrong jurisdiction could violate local privacy laws. These are issues that require proper legal review and risk assessment when considering SaaS/hosted in the cloud - although in reality, this isn't just an issue related only to the cloud and many companies do not realize that they already face such exposures. For example, using a data center owned or operated by a US company on non-US soil arguably exposes the data to the same US access framework as putting the data in a US controlled cloud[11]. Data privacy and protection is not a cloud issue but one that occurs whenever a company places their data with a third party.

Integration is another area of concern, and it rightly should be. Using applications in the cloud definitely can make integration more complex if those applications all exist in different environments, each with different data security and verifications requirements. It can also be a potential security issue if the points of integration are manually programmed without addressing the necessary security protocols. Integration is an area that needs to be well thought through; and given the complexity of solving the problem, may limit the adoption of multi-tenanted SaaS CTRM to smaller traders who may have less need for significant integration. It is perhaps less of a limitation in a hosted environment but it has to be recognized that for complex trading operations, integration is an issue that needs to be fully vetted and comprehensively addressed prior to a decision to acquire a cloud solution.

A 2010 Forrester report[12] commissioned by Symantec found that 58% of enterprises use two or more SaaS-based business applications and that 19% already had six or more SaaS-based applications. In the same report, 39% of SaaS customers reported concerns with data integration and, according to various practitioners[13] in the broader industry, about 20% of all SaaS projects already fail because of integration issues. The same article warns that the costs of integration can be huge, citing the statistic that for "every $1 spent on a customer resource management deployment, a customer can spend up to another $5 on integration." Another aspect of the same issue is data portability. Having spent money converting data to work with a particular service, moving it elsewhere can be another costly project. Integration concerns are viewed by our respondents as an issue even larger than security and rightly so in our opinion.

The respondents in our survey do seem to be well informed as to the benefits and pitfalls associated with SaaS and the cloud. However, an area of concern that was not identified (and perhaps should have been part of our questioning) relates to user experiences in negotiating and/or operating under service level agreements with the cloud solution vendors. Anecdotally, we are aware of a small number of purchase decisions that have been reversed due to the vendors not willing to be bound by a service level agreement that would be acceptable to the prospective customer.

[11] *Can European Firms Legally Use U.S. Clouds To Store Data?, 2012 article, http://www.forbes.com*

[12] *Enhancing authentication to Secure the Open Enterprise, Forrester Research Report, 2010*

[13] *www.readwrite.com/2013/03/05/software-as-a-service-the-dirty-little-secrets-of-saas*

Special attention should be paid to the service level agreement. According to a Gartner report[14], many people in IT procurement are unhappy with service level agreement contract language, and specifically as it relates to data security. The report finds that "contractually, very little security language appears in the body of SaaS contracts," and that "they (SaaS vendors) accept little or no financial responsibility for fulfillment of these vague commitments…." Negotiating service level agreements as opposed to licensing and support and maintenance agreements is likely an area where a company procuring a cloud-based CTRM product should obtain some experienced and qualified outside advice.

Despite the issues and concerns previously discussed, SaaS and hosted-in-the-cloud delivery models will continue to grow for CTRM and rightly so, as they do offer a number of substantial benefits. The decision to acquire any enterprise software should, of course, be made only after a structured acquisition process, including a through case-by-case vetting of the pros and cons of the various deployment methods. From that point forward, it's about project and contractual risks just like with any other implementation project - requiring due care and attention to the planning and risk mitigation areas.

When SaaS Is Not SaaS

The results confirm a key finding of the previous discussed CommodityPoint study - most respondents know very little about which vendors offer SaaS or hosted solutions. The vast majority of those respondents could not name a vendor offering SaaS or hosted solutions, or they actually named leading vendors that in our view do not, or cannot, offer solutions delivered in the cloud using legitimate web-based technologies and architectures. In part, this may be down to the fact that all vendors will make claims related to SaaS or hosted delivery when asked by a user or potential user and, in part, it seems to reflect a lack of understanding by the majority of the respondents as to what SaaS and/or hosted really is (see our definitions above). For vendors who can and do offer legitimate SaaS or hosted in the cloud solutions, this is frustrating and potentially damaging as it weakens their value proposition.

At the beginning of this report, we carefully defined some terminology. The fact is that all vendors of CTRM software will offer a 'SaaS deployment' if they are pushed. This is when those definitions need to be carefully reviewed and considered. We also stated above that developing the CTRM in the right architecture and technology set is essential in our view for a successful in the cloud deployment. Taking a client/server application, hosting it somewhere and then screen scraping it with Citrix is not SaaS/hosted in the cloud, nor by our definition is it even hosted. Furthermore, such a deployment may not bring the benefits envisaged as it may not offer the vendor the ability to reduce the costs associated with implementation and support. ComTech sees very few true SaaS procurements taking place; by this, we mean in a multi-tenanted environment.

We continue to believe that firms that adopt true SaaS for CTRM are more likely to be small less complex regional trading operations. Where we see the potential for growth is in the hosted in the cloud area. Here, a customized solution can be provided via the internet to meet the specific needs for a particular company. We see potential for growth here as it provides some combination of the benefits of SaaS in the cloud and minimizes some of the pitfalls like integration, security and loss of business agility. We see a much broader uptake of this type of model with subscription fees as opposed to license fees catching on in the trading industry in the shorter-term. However, to really provide the benefits, the CTRM needs to be written specifically for such a delivery mechanism. Architecture and technologies are key.

The sheer complexity of many trading operations and the speed at which the industry changes seems to us to continue to work against the true multi-tenanted SaaS for now, although over time, this may change as discussed above. Several vendors that we spoke to that can and do offer true multi-tenanted SaaS in the cloud options had had no or very low uptake to date. Instead, in the short to medium term, we see strong potential for hosted in the cloud (public and/or private) deployment approach and flavors of that model. We see a good future for E/CTRM in the Cloud but still think that true multi-tenanted SaaS will be limited to lower complexity, smaller, single commodity traders or those who are predominantly financial commodity traders.

In classifying the models, ComTech Advisory believes that the two important criteria to buyers will be 1) who is managing the hardware the software is installed on and 2) how the software is paid for. For a variety of reasons previously noted, we think there will be less general interest in sharing the same instance of the application software and/or database with other users. In a large part, we see that buyers will continue to procure the

[14] https://www.gartner.com/doc/2598716

E/CTRM software that most closely meets their business and functional requirements but will be more likely to discuss deployment alternatives with their chosen vendor. We see the cloud-based deployment feature of a particular vendor's selling proposition as being less important than the fitness of the software to meet the buyer's requirements. At the same time, ComTech Advisory already has a good deal of evidence to suggest that buyers are more cost conscious and vendors are more willing to show flexibility in terms of payment models and options.

About Commodity Technology Advisory LLC

Commodity Technology Advisory is the leading analyst organization covering the ETRM and CTRM markets. We provide the invaluable insights into the issues and trends affecting the users and providers of the technologies that are crucial for success in the constantly evolving global commodities markets.

Patrick Reames and Gary Vasey head our team, who's combined 60-plus years in the energy and commodities markets, provides depth of understanding of the market and its issues that is unmatched and unrivaled by any analyst group. For more information, please visit http://www.comtechadvisory.com.

ComTech Advisory also hosts the CTRMCenter, your online portal with news and views about commodity markets and technology as well as a comprehensive online directory of software and services providers. Please visit the CTRMCenter at http://www.ctrmcenter.com.

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Aspect's main products are AspectCTRM, AspectDSC and AspectPM.

Aspect CTRM
Commodity Trade Risk Management

AspectCTRM offers a continuous spectrum of increasing functionality in three flexible editions designed to meet the functional and budget requirements of its users. It begins with the Lite Edition (LE), with front office features deployable in hours for small companies; and upgrades to the Standard Edition (SE) which is also out-of-the-box with front, middle and back office functionality for any size company; and scales to the Enterprise Edition which is fully customized through professional services development. Rapid deployment is provided by Aspect out of the box, with customized configurations depending on the complexity of requirements. The solution scales from single users to thousands at multiple locations across global businesses, all backed up with professional support, security and disaster recovery built into the solution. AspectCTRM is an affordable option for small to mid-size companies – and because of its ability to scale and deploy within weeks – is also used by some of the largest companies globally.

The AspectCTRM suite includes the following modules:

Trade Management
AspectCTRM's Trade Capture Module features real-time calculations and fast-action closing reports. This powerful application utilizes On-Line Analytical Processing (OLAP) technology to enable 'slice and dice' reporting for quick data analysis that allows users to see P&L reports and trade scenarios from just about any view. This module captures physical and paper transactions; integrates and streams pricing and analytical information; generates dynamic real-time position management and profit and loss calculations; creates instant marked-to-market computations for multiple markets, pricing instruments, products, and much more. Effectively monitor trader portfolios and corporate exposure as positions change simultaneously with market volatility. Also reduce the time it takes to produce intraday and closing reports to seconds rather than hours or days.

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AspectCTRM's Physical Operations Module gives your team powerful functions to track and maximize transportation activities and opportunities throughout the supply chain. It gives your schedulers and operations personnel the tools needed to effectively track shipments and inventories and keep product moving, visible and

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Financial Operations

AspectCTRM's Financial Operations Management Module allows users to gain insight into movements, payments and costs associated with operating the enterprise and interacting with counterparties. Easily automate the matching of incoming and outgoing invoices against costs; allocate volume reports with required logistics declarations; create instant visual alerts when problems occur, and more. Access required tax, transportation, storage fees, costs, bank credit lines, letters of credit and indemnity from a centralized database for accurate settlement. Integrate with SAP, JD Edwards, Oracle, QuickBooks and other systems or produce invoices in AspectCTRM. Maximize cash flow and capital through detailed reporting and improved financial planning.

AspectDSC delivers real-time and historical news, spot and futures prices, and analytical charting tools for trade decision making on desktop and mobile devices. Leading sources include Platts, Dow Jones, Argus, NYMEX, ICE, London Metal Exchange, Marine Bunker Exchange and more. AspectDSC was the first market data and analytics solution available globally on the Internet more than 13 years ago and also the first to offer mobile access. AspectDSC is a user-friendly, configurable portal which is bespoke and personal to each user. Set up pages and panels with news, data and trading tools that support your trading, risk and back-office decisions. Aggregate and analyze all your data sources from one place and upload your company's proprietary prices for distribution to your users. Our support staff is available 24 hours, 5 days a week with professionals positioned to take your calls from every region in the world.

Aspect Price Manager (PM) is a forward curve management solution that supports the global price forecasting process. It aggregates forward curves and forecasts from all sources into a single database. It incorporates a knowledge-base of pricing methodologies and supports the end-to-end price forecasting process from traders entering differentials through to the delivery of prices exported to other systems. AspectPM provides a framework for calculating, consolidating, archiving and re-distributing forward prices. With AspectPM, traders can create and consolidate forward curves to feed into AspectCTRM, or other trade and risk management systems, for MTM calculations and risk analysis. It also manipulates and consolidates data to provide other derived curves for use internally, and to stress test trading positions.

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Brady PLC

Introduction

The days when businesses were required to procure and manage the technical infrastructure that software requires to run are fast disappearing. 61% of businesses were expected to have at least some parts of their operation hosted or in the Cloud by the end of 2013 and enterprise Cloud application revenues are projected to have reached $67.3b by 2016 (IDC).

Cloud based E/CTRM solutions can typically be implemented in a relatively short time frame, with significantly reduced in-house IT intervention and no increase in infrastructure expenditure. This dramatically opens up the market for smaller companies in need of E/CTRM systems, who historically had improvised with spread sheets as a consequence of limited IT staff resources. At the other end of the spectrum, larger organisations benefit through the increased scalability and flexibility that in turn allow them to consume new services, features and technologies more easily and in a more cost effective and agile way.

For Constellium, one of Brady's customers, the rationale for opting for a Cloud-based solution, was all about having 'fixed operational costs (OPEX) rather than investing in infrastructure and skills needed to maintain a specialised solution ... having easier access to skilled resources at Brady for problem resolution. We let the supplier take care of ensuring there is security and failover for example'.

With the continual changes in regulation, increasingly intense competition and tighter margins, Cloud based E/CTRM solutions make sense now more than ever. However, many in the conservative world of E/CTRM continue to be put off making the transition. This is largely because they continue to be held up on a number of misconceptions or simply because they don't understand the options and benefits available from marketing leading E/CTRM vendors like Brady. Brady can help customers understand the Cloud landscape and ensure that clients get the right solution for their business. Brady's Cloud solutions & services deliver reduced total cost of ownership, industry leading security, reliability & compliance as well greater flexibility and scalability – through a state of the art and future proofed platform. All of which enables businesses to move into the Cloud with confidence.

Cloud Atlas

Today the term 'Cloud' can be used to mean many different things ranging from full multi-tenanted (or multi-customer) shared system/services running in the public cloud through to virtual or dedicated private cloud environments. What's right for one organisation might not be right for another. For example, customers wanting ultimate control might opt for a dedicated private Cloud setup and often, for larger organisations taking their first steps into the Cloud, this makes sense. The economies of scale might not be the same but there are still significant benefits. Virtual private Cloud extends these benefits further without compromising on security or control. For example, one key benefit is the lead time to be up and running with a private Cloud solution. Production, test and sandbox systems can be made available almost with the flick of a switch and this represents a dramatic improvement over on–premise deployments. The same is true for subsequent changes and additions to those systems. New versions, features and technologies can be made available faster making Cloud solutions more responsive to the changing needs of the business.

Dedicated or virtual private Cloud can be viewed as a low risk first step, giving clients the scope to become accustomed with their new environment. Moving on from this, Brady's customers can opt to add more flexible solutions/resources from the wider Cloud. This sort of mix is more commonly known as a hybrid Cloud solution. Businesses that opt to take these incremental steps into the Cloud can maximise the cost savings and other benefits to their organisation at a rate that they are comfortable with. In this respect, Brady's Cloud solutions can not only meet today's somewhat cautious requirements but also the requirements of tomorrow when Cloud is more established across the enterprise. Hybrid Cloud is one of the areas we expect to see grow in popularity as it allows organisations to combine the security, control and performance of private Cloud with the greater economies of a wider more elastic Cloud.

Security

Security remains one of the biggest reasons many companies remain reluctant to move their systems and data into the Cloud. The perception is often that it is inherently more risky to have mission critical solutions in the hands of a 3rd party. This perception is, for the most part, flawed. Any infrastructure or enterprise that is connected to the outside world is potentially vulnerable. Cloud providers have understood this and indeed

wouldn't be in businesses if the issue weren't addressed. As a result, security in the Cloud is often better than that found on-premise.

All things considered, high levels of security should now be synonymous with Cloud; it is a Cloud provider's bread and butter. At Brady, the subject has always been of unparalleled importance and as a result we have made sure our Cloud platform is as watertight as possible. We currently have in place a multi layered system incorporating an array of tools and techniques including heavily restricted access to our physical data centres, intensive 24/7/365 intrusion and threat detection, firewalls, malware protection, server and network monitoring and hardening techniques. Our Cloud offering is fully ISO207001 compliant, which means it adheres to or exceeds more than 100 rigorous security related controls that ensure client data is safe and secure at all times.

Compliance

Compliance is a fundamentally important part of our industry, more so now than ever before. Many clients will have compliance programs (e.g. SOX) which their internal systems need to adhere to. Cloud solutions plugging into such an enterprise cannot compromise this and, therefore, need to be equally compliant. Fortunately, Brady's Cloud platform provides full ISAE3402/SSAE16 reporting, meaning it can neatly fit into a customer's compliance programme. The reality is that Cloud solutions which can't offer this just won't fly for many clients. In contrast, Brady can not only meet these requirements, they can also allow the client to shift some of the burden associated with achieving compliance and remaining compliant (inc. future audits) to the vendor. This helps to reduce total cost of ownership and further strengthens the value proposition associated with the Brady Cloud.

Conclusion

The ECTRM space is unique in that uptake of Cloud has been comparatively slow. It has always been perceived as relatively conservative in its methods but, as margins reduce and the Market becomes more and more competitive, the operational and financial ROI of making the transition will become more and more difficult for businesses in the sector to ignore. It's basic market dynamics; those maximising the potential of Cloud technology will eventually see a positive impact on their bottom line and those that aren't will be either forced to follow suit or fall behind competitively.

At Brady, we are delighted by the take-up of our Cloud Solutions and looking at the sales pipeline, Cloud-based solutions are certainly high on organisations' list of requirements. We offer Cloud Solutions across all our solutions from Energy Data Management, E/CTRM and cross-border power trading solutions to enterprise solutions for recycling companies. In our view, companies should embrace the benefits offered by Cloud Solutions as part of their continued business advancements.

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Generation 10 Ltd

Generation 10 specializes in bringing transparency, sustainability and value to the commodity supply chain through information technology. Founded in 2000, the company has a proven track record of supplying reliable software solutions to many areas of the global commodity supply chain, particularly in agriculture. We were among the first in the CTRM marketplace to provide a Software-as-a-Service option and partner with world leaders in Cloud services.

The key to a successful CTRM solution is not whether it is deployed via the Cloud or whether it's hosted on-site. Each is a perfectly viable option, depending on an individual organization's needs and preferences. Rather, the success of a solution is dependent on the depth of its functionality, the flexibility and adaptability of its underlying architecture, and the experience and dedication of the technology partner you choose to work with.

Our flagship product, G10 Commodity Manager, is a multi-commodity, multi-origin, multi-currency, highly configurable commodity trading, logistics and risk management solution. It is suitable for any type of physically traded commodity that is shipped in containers, break-bulk or tank.

G10 Commodity Manager brings transparency to forecasting, supplier and counter-party evaluation and risk management, enabling you to make better-informed decisions, optimize your operations and supply chain, and ultimately increase your profits, whether you are a trader, producer, freight forwarder, inspection company, warehouse or consumer. We also work with government agencies, industry associations and insurance companies.

Flexible and innovative products are only one part of the solution, equally important is user acceptance. We do not expect people to change the way they work to meet the needs of our products. Rather, we work closely with our customers to help them define their optimal workflows, then configure the system according to each individual user's role within the organisation. It helps shorten our implementation phase with minimal disruption to daily productivity.

Our Software-and-a-Service approach of incremental, regular updates results in an ever-increasing cycle of improvement and faster user adoption. Our emphasis is on business process evolution: the continuous improvement of performance and optimization of our clients' business processes. This approach guarantees the rapid and consistent delivery of new functionality, ensuring your systems stay relevant to the changing demands of your business and provides the ability to seize opportunities for better data management and analytics as they arise.

Our solutions focus on three fundamental areas that are critical for success in any organization: collaboration, process and measurement, and analytics.

I. Collaboration

"If everyone is moving forward together, then success takes care of itself." - Henry Ford

All of our applications are designed and developed from the user's perspective. Information from every area within the organization is collected, processed and distributed to every other appropriate stakeholder throughout the company and its value chain.

The result: Transparency, traceability, and a set of business processes and sharing tools that facilitate collaboration.

II. Process and Measurement

"If you can't measure it, you can't manage it." - Peter Drucker

Our advanced workflow and scheduling tools enable you to plan resources effectively, set targets and manage capacity. We monitor thousands of data points to deliver your business-specific metrics that not only identify where bottlenecks are occurring or costs are increasing, but can anticipate them before they happen.

The result: Real-time insights that lead to an unprecedented level of efficiency and control throughout your entire supply chain.

III. Analytics

"If you can't explain it simply, you don't understand it well enough." - Albert Einstein

It's impossible for anyone to digest the massive amount of complex transactions that occur daily within a supply chain, so our analytical tools do it for you. They drill down to the granular level but present the information in a visual, tailored, easy-to-understand format.

The result: A high-level understanding of varied, complex data that makes decision making both fact-based and intuitive.

A Dedicated Team of Experienced Professionals

All Generation 10 employees spend time working face-to-face with our customers in their own facilities. As their technology partner, we interact regularly with middle and upper management and participate in their strategic meetings to ensure that our solutions remain relevant to their needs.

The global commodity supply chain is complex, dynamic and ever-changing, and the real-world experience of our dedicated team of professionals is invaluable when positioning our customers for success, both today and in the future.

For the first decade of its existence, Generation 10 worked almost exclusively with cotton. This highly complex commodity involves a diverse supply chain, requires tracking down to the unit level, and is priced on a matrix of more than 15 different factors, premiums and discounts, each of which can change during the life of the unit. This breadth and depth of our understanding, combined with the flexibility of our solutions, has resulted in an application framework that makes applying across other commodities mostly a matter of configuration.

Whilst our expertise has been firmly rooted in agricultural commodities, we were able to configure G10 Commodity Manager for copper in a morning. Despite the fact that we had never worked with metals before, it was fully configured and marked to market by the time we broke for lunch. There are not many systems out there that are able to do that.

An Unbeatable Combination

When you combine the industry's most flexible and innovative products with a philosophy of partnership and collaboration, supported by a team of dedicated professionals with real-world experience, great results can be achieved.

If you are looking for a Tier 1 solution, you don't need to choose between having depth of functionality or having modern, flexible architecture. Generation 10 can give you both - at a fraction of the price of a traditional legacy system.

Visit our website (www.generation10.net) for more information, or contact us to arrange a personalized demonstration of all that Generation 10 can do for you.

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