

An _____
i n n o v a t i v e
_____ approach to _____
a c h i e v i n g

```
elif _operation == "MIRROR_Y":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = True  
    mirror_mod.use_z = False  
elif _operation == "MIRROR_Z":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = False  
    mirror_mod.use_z = True  
  
#selection at the end -add back the deselected mirror modifier  
mirror_ob.select= 1  
modifier_ob.select=1  
bpy.context.scene.objects.active = modifier_ob  
print("Selected" + str(modifier_ob)) # modifier ob is the active ob  
#mirror_ob.select = 0  
None = bpy.context.selected_objects[0]  
obj.data ob[0].modifiers[0].select = 0
```

The ETRM Of The Future

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Introduction

Due to advanced pricing and capacity planning capabilities, the energy trading and risk management (ETRM) system continues to fill critical functional gaps in the recording, processing, and settling of commodity transactions across the oil and gas industry. However, many of these solutions are showing their age. They're built on older technologies, which haven't adapted well to changing business conditions, nor have they facilitated accelerated deployment methodologies like Agile. As a result, new ETRM implementation costs continue to rise, as do ongoing support and maintenance costs.

In today's fast-paced, high-risk field of energy commodity trading and risk management, traders, risk managers, schedulers, back-office professionals, IT project and support leaders cannot afford to fall behind the competition by relying on outdated approaches like spreadsheets or legacy ETRM technology platforms that don't meet the needs of ever-changing business requirements.

So, how can organizations stay ahead of the curve? By shifting to the ETRM of the future. Getting there requires rethinking your approach to ETRM technology and partnering with an experienced energy business advisor that can help unlock enterprise value and manage risk.

Let's dig deeper.



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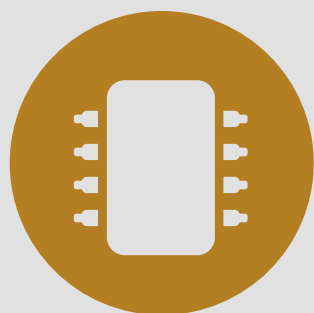
Your Solution: The ETRM System Of The Future

Applying digital transformation capabilities facilitate transformative business operations, enhance efficiencies, differentiate you from the competition, allow you to better manage risk and uncover new monetization opportunities.



Collaboration

Efficient collaboration, clear and streamlined decision processes, and tools to measure progress and drive improvement enable a high-performance business.



IoT

Connected sensor technology allows companies to measure asset performance to drive operational excellence.



Automation

Emulate human activities with software like RPA to automate high-volume, repetitive tasks across applications.



Big Data

Effectively manage and organize vast amounts of data to derive value and frameworks to drive action and performance.



Analytics

Effectively and efficiently translate the wealth of available data into actionable insight to inform and drive intelligent decisions.



Cloud

Reduce infrastructure costs, improve reliability and security through scalable and flexible cloud technology.



Mobility

User expectations have changed. Technology must enable a remote workforce.



AI

Discover and exploit hidden value from data using machine learning and AI-enabled analytics and capabilities.



Blockchain

Integrate blockchain solutions to ensure security, transparency and efficiency of transaction processing.



Cybersecurity

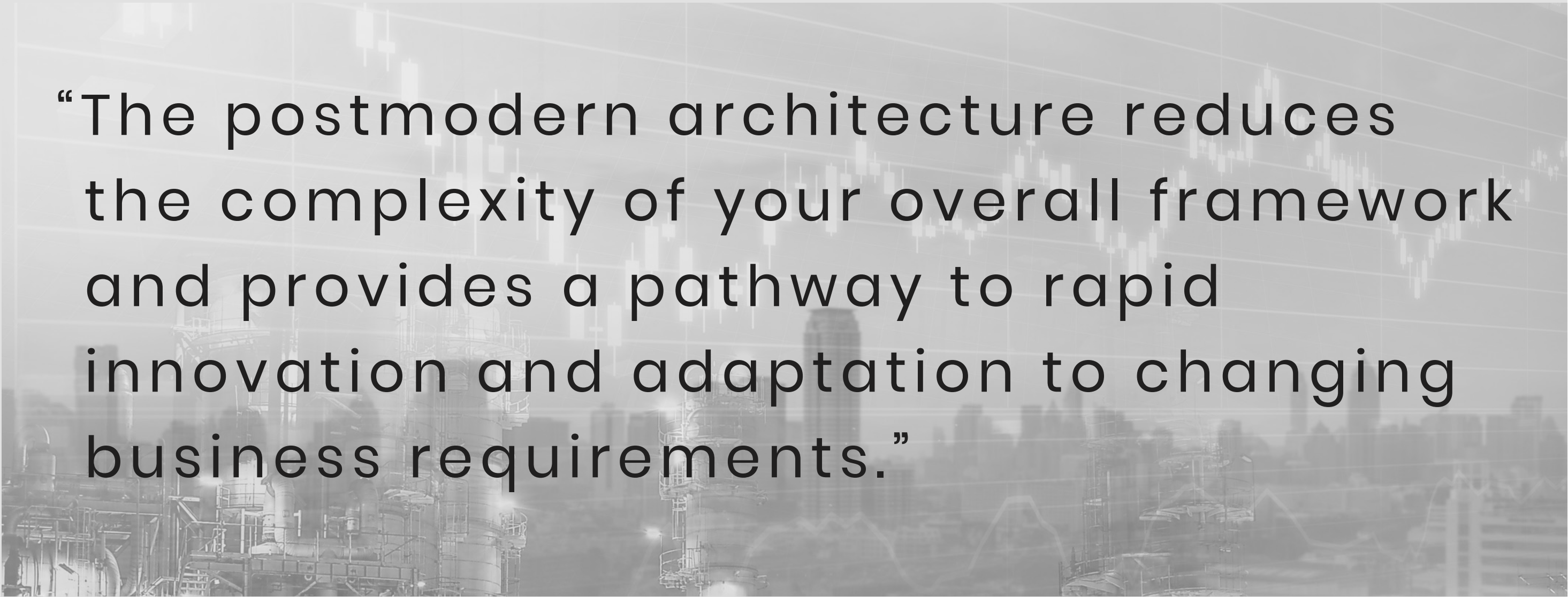
Harden and upgrade your ETRM system architecture to reduce the risk of a cyber incident.

Postmodern ETRM: Why Technology Should Impact Your Investment Decisions In Trading Systems

By Steven Bradford and Kent Landrum

Due to advanced pricing and capacity planning capabilities, the energy trading and risk management (ETRM) system continues to fill critical functional gaps in the recording, processing, and settling of commodity transactions across the oil and gas industry. However, many of these solutions are showing their age. They're built on older technologies, which haven't adapted well to changing business conditions, nor have they facilitated accelerated deployment methodologies like Agile. As a result, new ETRM implementation costs continue to rise, as do ongoing support and maintenance costs.

Software companies for many non-ETRM solutions within oil and gas have turned to "postmodern" concepts like cloud-centric architectures and digital strategies to mitigate costs, but the technology architecture for most commercially available ETRMs isn't conducive to leveraging these concepts. Understanding the advantages of these "postmodern" capabilities is critical to developing a strategic architectural approach, which could provide a scalable, reliable, affordable, and fit-for-purpose technology stack that enables more effective trading and risk management capabilities.



Top 4 Tips To Choosing The Right ETRM Or CTRM System:



Cloud First



Modular



Specialized



Agile-Enabled

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ETRM & CTRM Software Selection In The Digital Era

By Kent Landrum

Trading and risk management can be some of the most exciting and intellectually engaging aspects of the modern energy business, and the opportunity to transform a company’s process and technology through an ETRM or CTRM system implementation is tantalizing. There’s almost always a strong entrepreneurial drive from the commercial organization to rapidly deploy a new system and start capturing additional enterprise value. That sense of urgency can sometimes lead to rushed or even rash decisions about technology resulting in higher implementation costs, expensive ongoing support, or even the inability to realize the original commercial benefits case.

A confluence of changes in the ETRM/CTRM solution space combined with more macro technology trends is exposing weaknesses in certain formulaic IT and technology procurement processes that can lead to suboptimal outcomes. The following four recommendations are intended to directly enhance and augment such processes to improve the odds of finding the right match for the business.

Top 4 Tips To Choosing The Right ETRM Or CTRM System:



Understand the business model and core capabilities



Define a clear technology strategy and architecture



Educate yourself about the state of the ETRM/CTRM solution market



Enumerate and prioritize your business requirements with an eye to the future



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Software Quality Assurance & Your ETRM Implementation Project

By Kent Landrum & Steven Bradford


Energy trading and risk management (ETRM) systems provide sophisticated features and functionality that not only support the entire origination-to-settlement transaction life cycle but also provide complex calculations for reporting (e.g., WACOG, MtM). In addition, ETRM solutions are rarely implemented in a stand-alone fashion but are usually tightly integrated into a heterogeneous systems environment.


The characteristics of a rich feature set and extensive integration lead to increased implementation risk and pose a special challenge from a software quality assurance (QA) perspective. Developing a risk-informed testing strategy early in the project life cycle will improve delivered solution quality without inflating implementation costs.

Top 4 Testing Levels Applied To ETRM System Projects In A QA Program:

- 

Unit Testing
(generally, white box)
- 

Integration Testing
- 

System Testing
- 

Acceptance Testing

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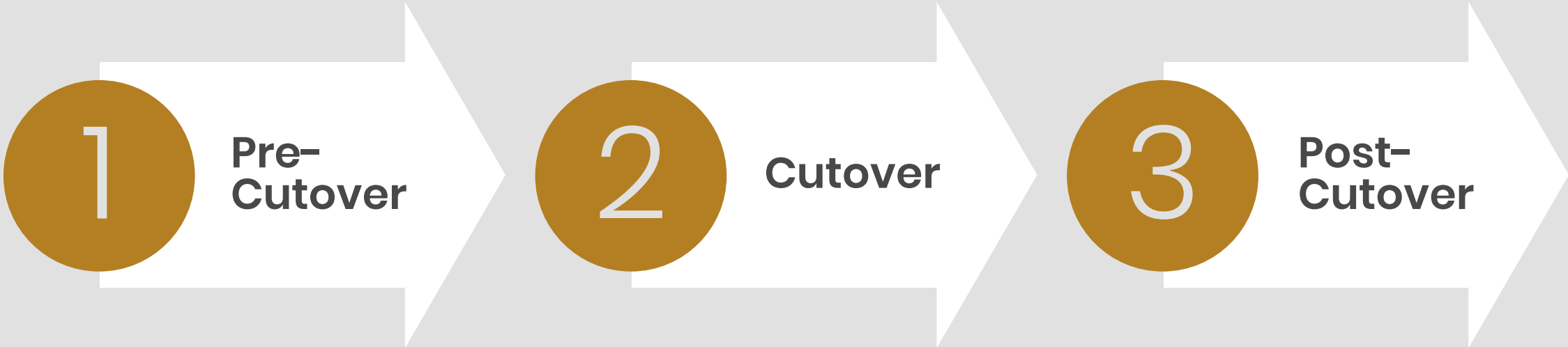
Leading Practices For ETRM System Conversion, Cutover & Go-Live

By Kent Landrum & Jason Wilton

Energy trading and risk management (ETRM) system implementations can be highly complex projects. The fact that, in many cases, they serve almost the entire origination-to-settlement transaction life cycle means that stakeholders from across the organization will be contributing to the project—trading, risk, scheduling, accounting, etc. The challenge grows as the number of regions and/or commodities increases.

Though there are other steps that can be taken to ensure overall success, a detailed, clear, well-reasoned, and rehearsed plan is the key to a smooth launch.

The Cutover Process Can Be Divided Into Three Primary Phases:



“Every ETRM system implementation or upgrade project is different, and each will pose a unique set of risks, as well as post-go-live needs to address, depending on the nature of the organization’s legacy systems, processes, and associated data.”

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Enhancing Your ETRM System With Advanced Analytics & Data Visualization

By Steve Roberts

Whether your organization is already running like a well-oiled machine, still working out a few rough spots, or considering a new energy trading and risk management (ETRM) system or upgrading, establishing a robust advanced analytics and data visualization capability will immediately boost the value you’re getting from your systems and underlying data.

But building an effective analytics platform isn’t easy. To do this, the organization—from leadership to the front lines responsible for data entry—will need to buy into the value that can be created to put in legwork upfront and establish a solid foundation of high-quality data.



Find out how AI and machine learning can transform the ETRM landscape. **CLICK HERE** to listen to the podcast.

A Business Must Invest In These 3 Cornerstones To Reap The Full Value Of Data It Produces:



Data Foundation



Accessibility



Self-Service

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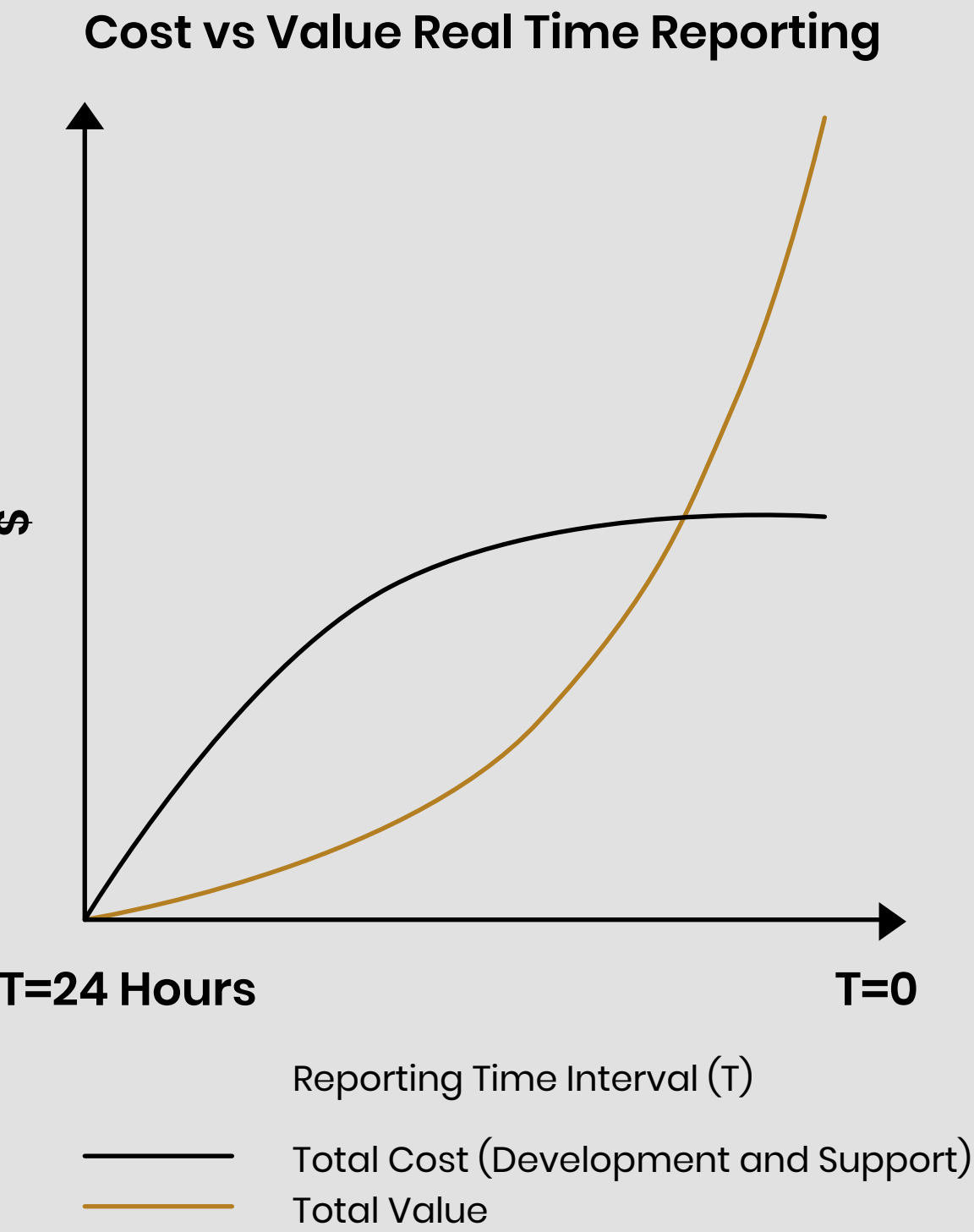
“From trading and risk control to finance and accounting, putting data to work for your organization allows your team to make sense of the wealth of information embedded deep in your organization’s systems and to make better, faster decisions with confidence.”

Real-Time ETRM Capabilities: What’s The Value Add & Key Challenges?

By Steve Roberts & William Boozer

In the modern trading world, there’s new data constantly available. Traditional energy trading and risk management (ETRM) systems take time—usually overnight—to ingest and process data to produce key output for risk control, including position, exposure, and more advanced risk measures. IT investments have allowed some companies to enable real-time risk analytics, but with scalable computing power increasingly available on-premises and in the cloud, “real-time” analytics for energy trading and risk control is becoming a reality for more organizations.

But what is “real-time”? Real-time reporting is the ability to gather, capture, calculate and report every change in data as it happens for analysis. However, there’s a balance between value and cost necessary to fit an organization’s needs. Development and support costs start to increase dramatically as the time interval for updates shrink. In most cases, having a near-time analytics approach produced at defined intervals will provide equivalent value as true real-time. These time intervals could be defined as minutes or hours, but nonetheless, result in a more valuable analytics capability as compared to traditional end-of-day reporting.



“Real-time position and exposure reporting sounds great and can deliver real value, but risk organizations need to be aligned on the requirements and limitations before heading down a potentially costly path.”

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The Cybersecurity Risk Posed By Your Old ETRM System

By Kent Landrum

Energy trading and risk management (ETRM) systems have been gaining momentum since the 1990s and continue to be at the heart of many energy companies' information technology landscapes. In many cases, these applications have been developed and continually enhanced for decades and carry with them a legacy of outdated technologies and software development standards.

While major ETRM vendors have made improvements to their platforms in recent years to address these limitations, relatively few customers stay on the leading edge of software releases. Also, most of the traditional ETRM solutions were originally developed as on-premises solutions and most clients continue to operate them this way. These, and other factors, combine to create the potential for significant cybersecurity risk.

The initial capital outlay and recurring operating expense have left little appetite for additional patching or upgrades in the absence of a key new piece of functionality demanded by the business to drive a benefits case even though it's exactly these steps that serve to reduce the potential exposure.

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“Outdated software at any level or layer of the ETRM solution architecture presents a security vulnerability that these cyber threat actors will seek to exploit.”

Top 3 Software Patching “Log Jam” Situations Created By An Out-Of-Date Application:



Running older versions of Java, the .NET framework, etc.



Using past versions of an SQL server or Oracle databases.



Hosting the application and database on obsolete versions of Windows or Linux.

What To Expect When Upgrading Your ETRM System

By Kent Landrum

Many established upstream, midstream, and downstream oil and gas companies were early adopters of both ERP and ETRM technology, and their investment in implementation projects was foundational in driving the early growth of the software segment. Software vendors built comprehensive solutions, like RightAngle, that support the full hydrocarbon origination-to-settlement transaction lifecycle and provide for associated accounting, tax, and other niche industry-specific use cases.

At the time, these software applications were built on leading technology platforms. Time and technology marched inexorably on and the pressure to support and enhance the core product with new features and functions was naturally in competition with backend modernization for scarce product management, development, and testing resources. For many solution providers, that underlying technology started to show its age and customers clamored for modernization to improve reliability, enhance security, improve performance, and streamline support.

Top 2 Key ETRM Upgrade Opportunities:

1 Move To Cloud

2 Enhanced Analytics

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“Energy companies faced with the prospect of a strategic ETRM upgrade opportunity can benefit from the early lessons learned through implementations and migrations to RightAngle S20 (or newer).”

Key Considerations For Supporting Your ETRM System

By Kent Landrum

Energy trading and risk management (ETRM) systems are flexible, powerful tools that often lie at the very core of an upstream, midstream, or downstream oil and gas company's commercial, logistics, and risk business process that enables the trade-to-settlement lifecycle and supports much of the hydrocarbon value chain. They're routinely relied upon by traders, risk managers, accountants, and many others across organizations for key business decisions to drive profit and loss (P&Ls), inform operations, and ensure compliance every day.

In many cases, they're also tightly integrated with critical IT applications like enterprise resource planning (ERP) systems and external market data providers and logistics partners. These characteristics combine to create a challenging IT support scenario where system performance, reliability, and resilience are paramount but are set against a backdrop of ever-increasing demands to innovate while continually driving down cost.

“Thoughtful and well-executed investments made in automation, reliability, and resilience will enable the IT organization to navigate a challenging environment in which system availability is non-negotiable and spend must trend down to free a sliver of capacity to partner with the business to innovate.”

IT Leaders Should Consider Getting Back To The Basics And Focus On Delivering:



Technical support



Continuous improvement



Value-added services

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Our Capabilities



Software Selection

Our business scenario-centric approach allows us to diagnose complex problems and create tailored solutions to ensure that real business is demonstrated in the software before selection. We also have long-standing relationships with a host of software vendors so managing the process is easier.



Implementation & Upgrades

Our professionals have, on average, over 15 years of ETRM implementation experience, and leverage proprietary templates and toolkits to accelerate any ETRM system implementation or upgrade; no matter how complex.



Process Design & Optimization

Increase efficiency and accuracy through meaningful business process mapping (as-is, to-be), gap assessments, business process re-engineering and comprehensive risk management, intelligence and governance.



Data Architecture & Integration

Connect and harmonize master and reference data from enterprise applications and devices, on-premises and in the cloud, quickly and securely through integration solutions and information governance.



Systems Integration

Leverage component-based technical solutions to streamline and accelerate system integration and enable cross-application process orchestration while paving the way for automation and data integration (e.g., RPA, APIs, etc.).



Advisory

We employ a team approach by leveraging Opportune's suite of solutions and capabilities such as Complex Financial Reporting, Tax and Valuation to provide complete end-to-end support.



Communication & Change Management

Provide tactical communication planning and execution as part of the organizational change management component of the ETRM implementation project by identifying stakeholders, determining information needs, selecting the optimal medium, establishing a cadence, developing, and delivering the message and incorporating a feedback loop.



ETRM Support

Familiarity with our clients' business objectives and comprehensive knowledge of their specific business processes enable us to provide end-to-end business services, technical support, and continuous improvement.



About Opportune LLP

Opportune LLP is a leading global energy business advisory firm specializing in adding value to clients across the energy industry, including upstream, midstream, downstream, power and gas, commodities trading, and oilfield services. Opportune’s service lines include complex financial reporting, disputes and litigations, enterprise risk, investment banking, outsourcing, process and technology, reserve engineering and geosciences, restructuring, strategy and organizational design, tax, transactional due diligence, and valuation.

We have provided ETRM services to a multitude of industry sectors and players. We offer our clients all the knowledge and resources that come with a seasoned staff adept in energy-industry specialization and financial acumen.

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