Oil and Gas IT Game Plan
How to survive and thrive mergers and acquisitions, divestitures and separation.

Introduction
The challenges and opportunities arising in the oil and gas industry - including elasticity in the cost of crude, increased competition, new and unconventional shale gas discoveries and a stringent regulatory environment - are forcing companies to merge, invest, divest and swap assets. By realizing that exploration/production and refining/marketing are different businesses that need specific skills and shareholder alignment, companies are now able to chart a course to become stand-alone entities with clear, separate operations.

Moreover, the recent discoveries of unconventional shale oil plays and their transformation to major crude oil production centers have led major O&G corporations to acquire assets and merge smaller players to exploit these reserves. These market dynamics have encouraged leading integrated O&G companies to follow a two-fold strategy:

- More closely align operations to the market and free up shareholder value via a split in their upstream and downstream operations.
- Acquire the assets of or merge with smaller players that have interests in unconventional sources and upstream assets.

This paper discusses our view of the typical challenges faced by IT groups during merger, acquisition, divestiture and separation (MAD&S) scenarios and the best practices to overcome those challenges.

Challenges Faced in the MAD&S Landscape
For the oil and gas industry, the IT issues arising from mergers, acquisitions, divestitures and separations can be immensely complex. Companies within the sector are more vertically integrated and have longer value chains than companies in other industries.

Based on our experience working on large-scale programs with O&G clients, some of the key challenges for the IT organization in the MAD&S space are:

- Program management
- Application and data management
- Testing and validation
- TSA and vendor contracts
- Organization and change management
- Infrastructure
Program Management

The success of MAD&S depends on proper planning, an effective program management office (PMO) and clean change management that straddles IT and business needs. In our view, key challenges in running a successful PMO are:

- Lack of senior executive engagement throughout the separation/merger phase.
- Absence of a dedicated transition/integration team to drive delivery.
- Lack of rigorous separation and execution planning, coupled with diminished focus.
- Following the deal announcement, a lack of focus on keeping the current business running.
- Weakly managed/orchestrated communication.

Success Factors and Best Practices

- **Governance & organization:** First and foremost to IT program management success is a pragmatic and structured framework for driving decisions and providing strategic direction. Project/workstream owners need to be brought together to ensure that projects are properly set up and benefits are clearly articulated.

- **Transparent review and reporting:** Tracking the status of the program and providing a consolidated view of progress is of great importance during execution of MAD&S activity due to the complexities involved. Maintaining key management information from the board level down and reporting on key actions and decisions enable an open and consistent information flow within the organization and hence are imperative for successful operation of the program management function.

- **Budget tracking:** The scale of the MAD&S activity and the intricacies of the transactions make it necessary to ensure proper management, tracking and reporting of program finances and making certain that all projects remain within budget and that remedial actions are taken when budgets are under threat.

- **Planning and tracking:** A consistent approach to program planning and tracking provides a consolidated view of the program roadmap and enables full control over outcomes.

- **Proactive risk and issue management:** For any MAD&S activity, a speedy and robust mechanism for dealing with program-wide risk and issue planning is highly recommended for successful execution of the initiative.
• **Dependency management**: Proactive mitigation of the risks arising due to project delays can be achieved by identifying, tracking and managing cross-project and cross-workstream dependencies.

• **Change control**: A robust change control mechanism for tracking changes to project plans, estimating the impact and taking action not only minimizes delays to the program but also provides consistency in information and decision flow within the organization.

• **Project assurance**: Key issues of individual projects and common concern across the program can critically affect the progress of the program; hence, an independent challenge and assurance function that helps identify and resolve these issues is of paramount importance.

• **Project standards**: Ensuring adherence to standard approaches, tools and techniques to support project delivery not only provides great economies of scale in the long run but also provides certainty of quality outcomes at every step of the program.

• **Benefits management**: Value-to-business is the key driver behind any program. Hence, planning and tracking the delivery of benefits and results arising from the program and ensuring that the investment delivers the required return to the business is critical to the evaluation of such initiatives.

• **Communication and stakeholder management**: With multiple stakeholders and more than one organizational entity involved in the MAD&S activity, consistent flow of information not only guarantees faster decision-making but also removes ambiguity of actions and outcomes. Implementation of a proper communication plan disciplines the engagement and management of stakeholder inputs to the program.

• **Resource management**: Availability of the right people at the right place and the right time is vital to a successful PMO. This is why an overall resource plan is needed that aligns the supply of resources and skills with the demands of the program.

• **Vendor management**: The involvement of multiple parties in the program with hand-offs at different milestones makes vendor management an integral facet. This is to ensure a rigor in the procurement and management of subcontracted third-party products and services and streamlined communication and engagement.

• **Delivery**: Iterative development ensures rapid delivery and risk minimization, as well as factor learning and improved re-usability.

### Application and Data Management

MAD&S introduces many challenges with respect to migration of applications, data and functionality changes to incorporate the organization’s goals (see Figure 2).

### Data Management Challenges

#### Knowledge of the System
Understanding the data and the underlying business rules are proving to be the primary reasons for delays and the resulting escalating costs.

#### Short Turn-around Time
Typically, there is a need to freeze the data entry in the production system while separation is being performed; as a result, there is a need to minimize downtime as much as possible.

#### Managing Sensitive Data
Data separation activities may require movement of sensitive data. Security and legal requirements may prevent sharing of sensitive data with an offshore IT partner.

#### Ensuring Data Integrity
There is a need to ensure data integrity, as the database schemas will change; business entities will change to portray different functional meaning; and the format and usage of data captured in the new system can be totally different.

#### Multiplicity of Interfaces
This is the main challenge of an integrated separation effort. If “n” application systems must be directly interconnected, it will produce \( n(n-1) \) connections, or interfaces.

Figure 2
Based on our experience with O&G clients, key challenges for application and data management include:

- Impact on business process as part of a split or merger and identification of process hand-offs.
- Segmenting and management of “as-is” applications vs. applications that require modifications (projects).
- Impact of data requirements and data transformation.
- Meeting short-term application needs while transforming applications for future state.
- Establishment of standards through a homogeneous representation of data across various data sources.

Business and IT groups have different points of view for data separation complexity (see Figure 3).

### Success Factors and Best Practices

There are four key steps to successful data management in a typical MAD&S scenario (see Figure 4):

- Analysis and strategy for data separation
- Preparation
- Execution
- Stabilization

Key considerations for data management include:

- Source application availability and criticality
- Target application
- Process complexity involved
- Volume of data
- Data quality

### Business vs. IT

<table>
<thead>
<tr>
<th>Business Point of View</th>
<th>IT Point of View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of business process shared between upstream and downstream companies</td>
<td>Shared infrastructure</td>
</tr>
<tr>
<td>Functional dependencies between the two entities</td>
<td>Shared applications</td>
</tr>
<tr>
<td>Common roles (business and IT staffs performing job functions for both companies)</td>
<td>Number of interfaces between applications</td>
</tr>
<tr>
<td>Common customers</td>
<td>Shared data between upstream and downstream business entities (i.e., enterprise BI)</td>
</tr>
</tbody>
</table>

Figure 3

### Data Migration Framework

<table>
<thead>
<tr>
<th>Assess &amp; Profile</th>
<th>Cleanse</th>
<th>Transform</th>
<th>Load &amp; Verify</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steps Involved</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Assessment study</td>
<td>• Identify and plug data inconsistencies</td>
<td>• ‘As-is’ and ‘to-be’ mappings and templates</td>
<td></td>
</tr>
<tr>
<td>• Source and target study and gap analysis</td>
<td>• Data quality checks</td>
<td>• Usage of migration tool</td>
<td></td>
</tr>
<tr>
<td>• Extensive data profiling</td>
<td>• Fill data gaps to enable data split</td>
<td>• Initial bulk load</td>
<td></td>
</tr>
<tr>
<td>• Sensitive data masking and split</td>
<td></td>
<td>• Validation of the migrated data</td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td></td>
<td>• Delta-load the spilled or missed data</td>
<td></td>
</tr>
<tr>
<td>• Early detection and removal of redundancies</td>
<td>• Minimal data volumes</td>
<td>• Assured load completeness</td>
<td></td>
</tr>
<tr>
<td>• Assured data quality</td>
<td>• Assured data quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value Creators</td>
<td></td>
<td>• Evolution of standards if none exist</td>
<td></td>
</tr>
<tr>
<td>• Data profiler</td>
<td>• Faster template-driven design</td>
<td>• assured load completeness</td>
<td></td>
</tr>
<tr>
<td>• Data generator</td>
<td>• Rapid script development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Metadata manager</td>
<td>• Faster execution of one-time data migration tasks</td>
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</tr>
</tbody>
</table>

Figure 4
Separation/Integration Testing

MAD&S requirements introduce the need for considerable changes in applications (multiple small projects) and thus the requirement for testing various components/applications of the entire IT portfolio. The different types of testing involved in typical MAD&S scenarios include:

- Business scenario/process end-to-end testing, including integration with non-SAP applications.
- Functional testing of core ERP transactions.
- Testing of interfaces between ERP and other applications.
- Security/role-based testing.
- Break-point testing.
- Supporting user/business acceptance testing.
- Automation assessment, recommendation, development and execution.
- Performance testing.
- Data conversion testing.

In our view, the typical challenges in separation/integration testing are around the six components of people, process, governance model, infrastructure, data and tools (see Figure 5).

Success Factors and Best Practices

The key to address the above challenges lies in the following best practices:

- Building a scalable testing model to cater to the needs of separation or integration testing built on goals, KPIs and metrics to determine the progress and health of the program.
- Implementation of consistent and repeatable testing processes.
- Identifying structured methods to determine the amount of testing.
- Adoption of solution accelerators and techniques to streamline and enhance the testing process.
- Implementation of tools and infrastructure to provide greater business value while significantly reducing the time and effort involved, as well as the amount of manual errors.

Figure 6 illustrates a core-flex resourcing model, along with the various critical elements to address the separation/integration testing scenario.

TSA and Vendor Contracts

The IT organization faces multiple challenges in building Transition Service Agreements (TSA) and

| People | • Availability of SMEs and over-allocation of business users.  
| Process | • Flight of knowledge risk.  
| Governance Model | • Scales of economy not exploited.  
| Infrastructure | • Possibility of disruption of existing processes due to organizational/BU reprioritization.  
| Data | • Variation in test coverage and risk prioritizations.  
| Tools | • Unidentified and unutilized accelerators and best practices.  
| | • Weakly managed/orchestrated communication.  
| | • Absence of a centralized testing body.  
| | • Lack of single ownership and accountability due to BA's and developers’ focus on separation-related activities.  
| | • Downtime of test environments.  
| | • Constant struggle to get infrastructure team's attention on a priority basis for non-production environments.  
| | • Capacity planning issues when it comes to multiple test environments.  
| | • Lack of planning separation-specific test requirements around infrastructure.  
| | • Unavailability of test data.  
| | • Absence of data migration/validation tools.  
| | • Unpreparedness for separation-specific test requirements (data migration).  
| | • Lack of interactive and effective medium for sharing and collaboration.  
| | • Absence of an integrated 24x7 testing delivery dashboard/analytics.  
| | • Absence of regression/risk-based testing tools that can accelerate rate of testing.  
| | • Lack of on-demand ad hoc automation tools/utilities to expedite testing process.  
| | • Unavailability of updated test scripts for less frequently used applications.  

Figure 5
contracts during MAD&S scenarios. Based on our experience, the key challenges faced include:

- A poor approach to categorization and prioritization of vendor contracts.
- Underestimation of time and effort required to review and negotiate new contracts.
- Absence of strong project management overseeing the contract separation/merger process.
- Lack of TSA and SLA rigor and formality in a separation scenario due to false comfort in “same parent” relationship between parties.

Success Factors and Best Practices

We follow a structured approach to managing the TSA and contracts, which is critical to the successful delivery of any MAD&S program. Ideally, a project manager with significant sourcing experience should lead the overall contract separation/merger effort, focusing on the following key activities:

- Develop an inventory of contracts/TSAs.
- Review terms and conditions and categorize contracts into logical groups (i.e., unnecessary, covered under affiliate agreement, new contract required, etc.).
- Determine criticality of the contract and estimate time to complete necessary actions.
- Identify appropriate negotiations structure (owner rep, user rep, etc.) and decision-makers for each contract.
- Determine roles and responsibilities (legal review, structuring and negotiation, business review, etc.).
- Establish timeline for required actions.
- Execute contract split/merger.
- Track progress of all applications/projects with respect to the agreed-upon TSAs.

Organization and Change Management

Organizations have to adapt to multiple changes during the MAD&S initiatives. Based on our experience, the IT department faces the following challenges:

- Unclear future-state design for the separated/merged companies, including discussions regarding shared services.
- Weekly managed or poorly orchestrated communication strategy.
- Lack of a thorough change management plan and approach.
Absence of clear indicators to determine the success of the change management process.

Insufficient focus on business readiness as initiatives near completion and transition.

**Success Factors and Best Practices/Approach**

A pragmatic approach to planning, analyzing, implementing and sustaining/monitoring of the organization and change management process is necessary for the successful delivery of the programs (see Figure 7).

**Implementing the Infrastructure**

The backbone for a successful MAD&S planning is implementing a robust infrastructure. There are multiple challenges in infrastructure planning during a MAD&S scenario:

- Business and application changes/indecision.
- Safeguarding information security by aligning security policies.
- Complicated application and infrastructure environment.
- Consolidation of technical architectures to reduce cost and complexity of IT environment.
- Delayed hardware/software orders (due to late placement or late delivery).

- Downstream data center setup (sizing, capacity, contracts).
- Disaster recovery and business continuity services (to prevent potential loss of important assets such as data, hardware and software).

Figure 8 displays the scenario in terms of separating the legacy environment into two separate companies.

**Success Factors and Best Practices/Approaches**

- Assess infrastructure dependencies.
  > Start with TOGAF-based reference framework.
  > Develop infrastructure dependency list.
  > Eliminate redundant hardware and software.
- Consider migration alternatives.
  > Single greenfield.
  > Dual greenfield.
- Develop phased migration plan.
  > Technology dependencies.
  > Regulatory constraints.
Separation into Two Companies

- Implement transition plan.
  - People.
  - Process.
  - Technology.

Conclusion
MAD&S poses multiple IT challenges for O&G companies; however, taking a structured approach and engaging the right partners to bring in learning and best practices can guide organizations through those challenges and help in successful delivery of the initiatives.

The key areas of action when embarking on an MAD&S endeavor are:
- Definition of scope, identification of projects and development of plans for the MAD&S program.
- Enablement of the IT PMO in orchestrating split/MAD&S in a challenging environment and integration with enterprise goals while minimizing risk.
- Guidance, prioritization and management of the separation/integration of all IT contracts and licenses to ensure compliance.
- Management of the creation, execution and extrication of TSAs between the upstream and downstream companies.
- Provision of resources (consulting and technical) across different skill sets required to deliver projects or manage the overall program.
- Management of critical dependencies/impact on in-flight projects and smooth execution without interruption.
- Provision of expertise in defining and executing data separation strategies, testing factories and other core technical concepts.
- Empowerment of the CIO to proactively support and communicate with the C-suite regarding critical MAD&S issues related to IT.

It is vital for organizations engaging in MAD&S activities to work with trusted partners with industry knowledge/expertise and experience from previous IT MAD&S projects to ensure greater transparency, increased reliability and efficient execution of the programs.
About Cognizant

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