Intelligent Energy Assessment: 
The First Step Towards Operational Excellence
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Executive Summary
Intelligent Energy (IE) initiatives to improve asset performance and boost corporate value through operational excellence are an inevitable consequence of the growing sophistication of technology across all industries. As discreet functions “go digital” and yield improvements in efficiency and performance, it follows logically that integrating and streamlining such operations will realize even greater improvements. Operational excellence includes the following major concepts necessary to effect innovative and efficient methods of maximizing HSE and production performance:

• Fully-integrated multidisciplinary operations
• Digitally-enabled technology
• Business or operational intelligence
• Task and process automation
• Innovative and efficient methods to maximize production

As many companies are learning “the hard way,” successful adoption of Intelligent Energy principles is achieved only through an extended period of deliberate practice, which means learning through many cycles of trial and error. Simply “hard wiring” existing applications and data is expensive and typically duplicates a manual data extraction process with a computerized data migration process which does not last beyond the first significant software upgrade. What’s required is a fundamental change in the way a business operates.

To help guide companies through implementation of IE initiatives, Landmark has developed an Intelligent Energy Assessment program that shortens the process as much as possible by injecting early in the process the software, experience, and knowledge gained by our Intelligent Operations Solutions (IOS) team over the last seven years.

Laying the foundation for a clear and effective business transformation road map, the Intelligent Energy Assessment is the first step toward achieving operational excellence through IE initiatives.

What We’ve Learned
Applying IE principles in the quest for operational excellence leads inevitably to a business transformation that must align people, technology, and the organization itself to the new vision. By definition, Intelligent Energy introduces new information technology tools, so organizations must change the way they work in order to take full advantage of an approach that’s going to require workforce adoption of new work processes and, ultimately, changes in behavior.
Thirty years ago, exploration faced these same challenges of how to manage a business transformation in the quest for operational excellence. As with current IE initiatives, the gains achieved from similarly themed initiatives are substantial, as recently quantified by E&P companies who report such improvements as a 98 percent reduction in engineers’ data-related NPT in one case; reaching production plateau four months early; uptime of 95 percent versus 65 percent forecast during startup, and saving over $70 million in lost production opportunities avoidance.

However, because the IE solution addresses the broad concept of “operational excellence,” and varies from company to company—and even from asset to asset—companies struggle to understand how these changes should be effected.

Landmark has applied lessons learned in oil and gas, the process industry, and from business performance-management solutions implemented in manufacturing, aerospace, automotive, and other industries to the challenge of operational excellence. In oil and gas production, many work processes are based on unique, industry-specific analytical models, which is why only teams highly experienced in oil and gas production can deliver these solutions in a timely manner.

With nearly 100 workflows delivered using our DecisionSpace® Production solution, Landmark’s IE solutions have been successful from day one of implementation. This is due to the system capabilities and ease of configurability, as well as the experience of the IOS team in defining and following the IE process, which begins with the Assessment.

IE Assessment Overview
An assessment project is essential any time an organization undertakes a major initiative to improve asset performance and increase corporate value. The objective of the assessment is to understand the organization’s vision by following a structured approach in interviewing a broad group of stakeholders, then developing a near-term/long-term strategy by thoroughly analyzing the business priorities and value propositions. This kind of analysis is key for any business transformation initiative, as it can lead to fundamental changes to the way the business operates.

Landmark has developed the Smart Transform™ service methodology that helps customers get maximum value out of their technology investments. The Smart Transform model consists of the Smart Vision™ assessment and planning phase, the Smart Deploy™ implementation phase, and the Smart Sustain™ transition phase that provides transition services to effectively pass the responsibilities on to the customer. This paper describes in detail the Smart Vision assessment phase.

Customers also benefit from early critical assessment of the organization’s vision, and
identification and prioritization of potential process improvements. The assessment helps to benchmark the current effectiveness of the organization, and identify a course of action to enhance performance. Stakeholders’ requirements are aligned with the organization’s vision, while the scope and timeline are aligned across all groups. Thus, the assessment process enables the customer to participate in mapping the business transformation.

During the assessment, information is gathered to identify and understand business drivers and goals in order to expose and articulate the organization’s operational-excellence vision, which will differ from broad IT or engineering objectives. The assessment provides a structured approach to uncover and identify how Intelligent Energy initiatives can support and solidify the company’s strategic objectives. Through the evaluation and analysis of this information, the working solution roadmap is produced.

The first objective of the assessment is the determination of the organization’s current status, including its level of understanding of IE, its readiness to change, and a first pass at what the IE initiative may comprise. In other words, the assessment is a way to look into the world of Intelligent Energy and identify the functionality that is best suited for a company’s particular operating environment. That is, how can it work for you? Often, the assessment uncovers unexpected paths to better performance.

Following are some of the high-level tasks performed in an assessment project:

- Survey available information and interview stakeholders
- Analyze current business processes and available infrastructure, and rank improvement opportunities based on business value
- Prioritize the near-term and long-term roadmap
- Capture high-level functional and technical requirements for the prioritized scope
- Estimate the level of effort, cost, and scheduling for the recommended roadmap
- Provide business case justification for the roadmap

In addition, the assessment requires several in-depth analyses, including a Gap Analysis, which compares actual performance with potential performance to determine whether an organization is meeting expectations and using its resources effectively. The Process Analysis helps in understanding the pros and cons of an existing process, and identifies opportunities for improvement by performing Business Process Management tasks.
Finally, the Scope Analysis captures high-level requirements pertaining to specific core activities or “domains” that comprise the IOS projects and are defined as follows:

- **Technology:**
  - Reservoir
  - Wells
  - Artificial Lift
  - Facilities
  - System Infrastructure

- **Organization:**
  - Management
  - Engineering
  - Infrastructure and IT Support

- **Operations:**
  - Reservoir
  - Production Operations
  - Facilities
  - Maintenance
  - Logistics and Supply Chain

Specifically, the Scope Analysis identifies: 1) the technological environment necessary for the effective deployment of the IE project; 2) the operational capabilities and constraints that may impact IE project deployment and subsequent automation of operational workflows; and 3) the organizational capabilities and constraints that may impact project deployment and subsequent achievement of a collaborative work environment among various interest groups using common data and work practices.

**Landmark’s Assessment Methodology**

The main purpose of the IE Assessment is to gather information to identify and understand the business drivers and goals of the initiative. Through the evaluation and analysis of this information, Landmark is able to develop a roadmap that will lead to a conceptual scope of the target workflows or RFP, or an implementation plan with associated timing and effort.

The Assessment is conducted through a series of interviews and collaborative sessions with the customer’s designated subject matter experts (SME), as well as through analysis of available client information.

Typically, the project begins with a kickoff meeting in the client’s offices attended by the key project personnel and sponsors, and usually is executed mostly on-site by Landmark’s core team, with support, when required, from Halliburton’s consulting services. During on-site work, close interaction with client staff is needed to gather all the necessary information. The findings and analyses of the assessment are discussed with clients during execution, and a final report is generated for client review and approval.
Landmark’s IE Assessment is a structured approach made up of two clearly distinct steps: Stakeholder Communication and Analysis & Report.

During Stakeholder Communication, a series of interviews is conducted with key client personnel. The client will have identified the SME(s) for each Workflow that will be available to work with Landmark consultants during this phase. Based on the outcome of these interviews, additional interviews with other personnel may be scheduled. Some tools used to gather information are Surveys, Questionnaires, and Observations, while any existing documentation on current processes can be helpful in capturing the exact business process.

Examples of interview questions in this phase are: What are the primary performance management areas of interest? What are the business capabilities desired as a result of this initiative? And, what are the current business challenges that you want to address as a result of this initiative?

The main outcomes of the Stakeholder Communication phase are a strong understanding of business goals and objectives, identification of stakeholders involved, and comprehension of the existing IT infrastructure maturity.

In Step 2, Analysis & Report, the information gathered is evaluated to develop strategic options based on Risk, Economic Feasibility, Prioritization of Scope, and Time to Value. These strategic options are then reviewed by the stakeholders and adjusted based on their feedback, after which a report is prepared to consolidate all findings.

Based on this analysis, Landmark can then develop near-term and/or long-term strategies for IE implementation, along with recommended next steps, such as perform proof of concept; upgrade IT infrastructure; RFI/RFP; vendor selection; and solution implementation. The strategy thus comprises the road map for the next steps, including timeline and milestones. Based on project needs, a business case justification and ROI also may be prepared to support the road map.

Based on the Smart Vision assessment results, Landmark can propose a conceptual design, which is a preliminary drawing showing ideas that have been formulated based on the actual plan. Once the conceptual design is formulated, Landmark once again seeks client input to confirm that what has been proposed is an acceptable layout.
Delivering Results

Landmark’s Intelligent Energy Assessment project provides huge business value for the customer, saving both time and money by providing specific deliverables that outline logical next steps to address business challenges. The Project Findings and Recommendations document provides a consolidated list of project findings and recommended next steps. The Business Case Justification and ROI captures the value proposition for the recommended next steps, with the ROI spreadsheet created to support the justification. Finally, the Roadmap defines major milestones/components that belong to each key phase in a successful transformation of the business process, and matches short- and long-term goals with specific technology solutions to help meet those goals.

For companies seeking to implement IE initiatives in pursuit of operational excellence, Landmark’s IE Assessment program produces the roadmap to consensus about a specific set of needs and the technologies required to satisfy those needs. By providing a mechanism to help forecast technology developments, as well as a framework to help plan and coordinate those developments, the IE Assessment truly is the first step toward operational excellence.