

**SPE 112122**

## **iValue, An Intelligent Energy Strategy for an Integrated Gas Major**

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### **Abstract**

This paper outlines the distinctive approach that has been taken by BG to the development and implementation of an “Intelligent Energy” strategy that covers the entire gas value chain, and supports the company’s wider development plans.

The paper focuses on

- The design and delivery of a capability or solution lead approach
- A value driven implementation programme of work
- Integrating across the gas value chain from E&P through LNG to Power, Transmission and Distribution

By reference to development plans and early progress examples will be given as to how implementation of these new concepts and technologies can be embedded and integrated into operating assets.

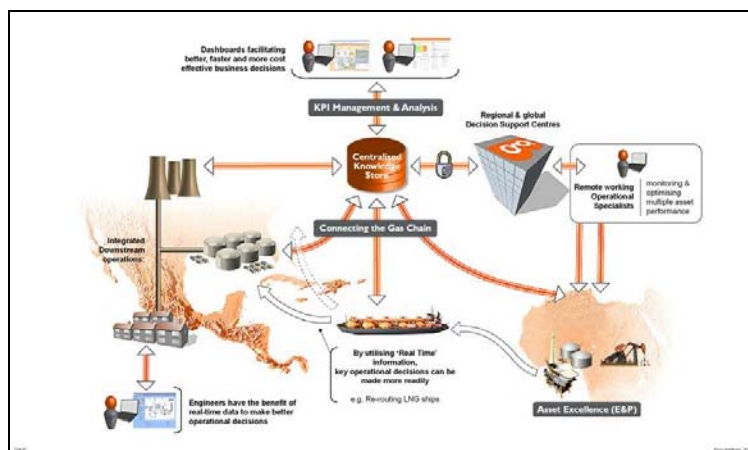
This paper will end by outlining the wider vision of where BG wants to move over the next 5 years to dovetail into and support the company’s wider cultural transformation programme.

### **Introduction**

iValue is BG’s Digital Oil Field Programme which has been running since the end of 2006 and aims to leverage the potential of new real time technologies and collaborative ways of working. However, it is not just about technology, it’s about developing capabilities and collaboration between disciplines, with suppliers, across business units, regions and locations.

### **What is iValue?**

BG is unique amongst its peer companies because the iValue Programme is looking at the integration of the gas value chain from reservoir to customer, encompassing all segments of the business including E&P, LNG, Transport & Distribution and Power (Figure 1).



**Figure 1: BG’s iValue Vision, connecting and transforming the business across the entire gas value chain**

The initial programme focus is on E&P where the iValue vision is to connect people with real time data enabling the optimisation of core business processes facilitating better, faster and safer decision making.

To achieve this, real time and collaborative technologies are being deployed underpinned by comprehensive management of change programmes to focus on the people, process and organisational impacts of the new technologies. iValue has taken a capability platform approach which is delivered through the integration of five key elements

People ‘Soft HR’ Team and Behavioural change is the key to success and overcoming resistance to change

Process – ways of working need to be adjusted to operate in a collaborative environment in real time

Technology is the enabler – it needs to be reliable, easy to use and be well supported.

The Physical Environment impacts the way people work and needs to facilitate the new ways of working

Organisation changes – ‘Hard HR’ e.g. Changes to Org structures, roles, accountabilities - may be required to support the new ways of working

Only by addressing all 5 will a capability be successfully delivered.



### Why Now?

BG has adopted a ‘Fast Follower’ approach utilising ‘off-the-shelf’ and proven technologies that require minimal customisation. This means that the majority of the technologies utilised are mature and have delivered tangible and well documented benefits for other organisations. This presents BG with the opportunity to take advantage of experience garnered in previous deployments by other operators and strategic partners such as IBM.

BG’s plans for the future (organisational growth, production targets and expansion globally) will require a new way to do business given that traditional approaches will be virtually impossible to deploy with the industry’s current and future resources constraints. iValue’s real time and collaborative technologies will create the ability to connect BG together like never before, to support remote working, leverage expertise (both internal and external) from around the globe and ultimately to enable faster, better and safer decision making.

### iValue Capabilities

The iValue Programme is currently working to deliver a series of capability solutions (Figure 2). These are briefly outlined below:

- Production Data Management System (PDMS) – delivered by the Developments Functional Group: automates real time data collection from the field and provides a foundation for production surveillance, reporting and analysis. The system delivers the data directly to desktops
- Integrated Production Management System (IPMS): building on PDMS to form an integrated production environment delivering the business’ needs whilst maintaining a minimum standard across the regions. This system integrates real time data, integrated asset models and process work flow. It supports and enables BG’s Production Excellence Initiatives such as Production Optimisation, Production Forecasting and Loss Allocation
- Integrated Collaborative Environments (ICE): Linking Production Operations, Drilling Operations and Expert Support Centres with operational sites utilising real time data feeds. These environments enable multi-disciplinary teams in split site locations to develop a shared situation awareness allowing the right decisions to be made in the right time
- Knowledge Sharing Capability: Improving BG’s capacity to share good practice around the organisation by providing tools such as BG Connect which enables users to find expertise and develop communities of practice
- Greenfield developments: iValue minimum standards for data management, IT infrastructure and Instrumentation within assets to allow new projects to be compliant.

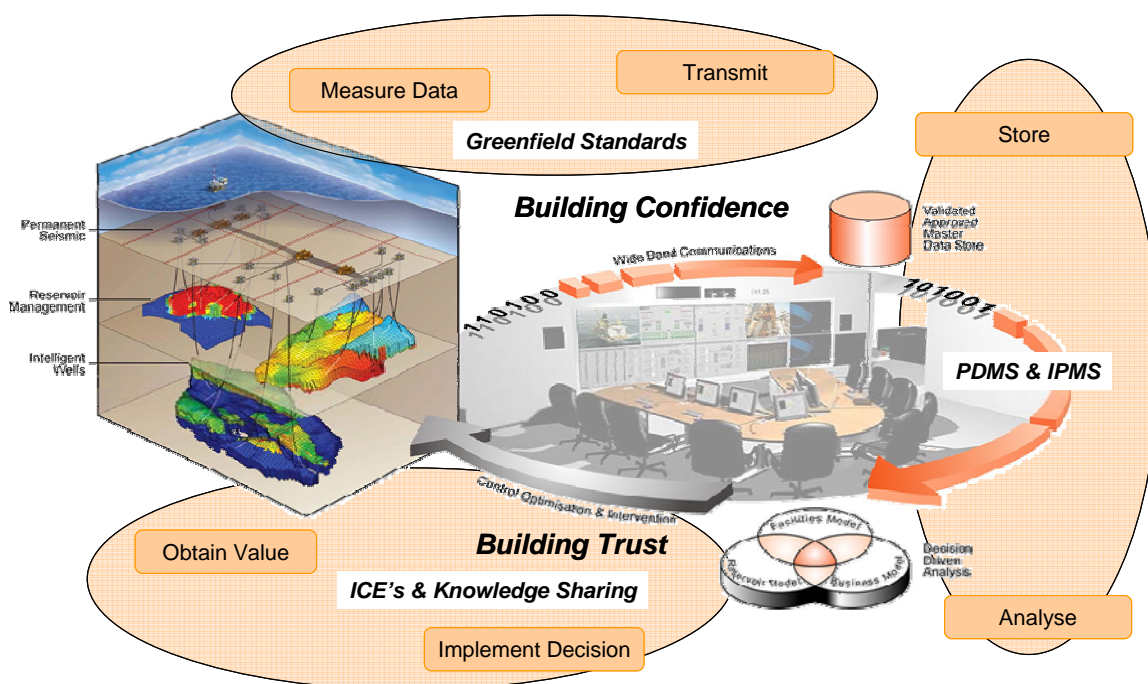


Figure 2: iValue looks at the holistic picture from data capture to decision-making across the gas value chain

All of these capabilities are wrapped within a rigorous and structured change management programme. This ensures business processes are adapted to meet the requirements of enhanced collaboration.

### iValue's Role

The role of the central iValue team is structured around three parallel goals:

1. To inform, enrol and engage key stakeholders on the opportunities that can be delivered by utilising digital technologies to connect people with real time data & information, including Functional Heads, General Manager's and assets.
2. To develop and facilitate the deployment of iValue capabilities to support key value drivers and improvement initiatives such as Production Excellence
3. To develop and refresh the overall vision and strategy for BG's iValue Programme

The programme also integrates with the central Information Management group by co-ordinating functional business opportunities, specifying technical requirements and working with IM to select, design, implement and deliver appropriate solutions. Most recently the iValue Programme has provided some of the principle input in to the strategy on what will be the IM capabilities and infrastructure required to support the BG organisation over the next 3-5 years.

A major activity for 2007 has been identifying the capabilities required from iValue to support BG Group's Functional Excellence plans. Workshops were held with the Functional Heads together with follow up interviews. A series of themes were identified as key requirements for Functional Excellence going forward and iValue can support them by providing assets with the appropriate tools and real time capabilities enabling:

- Enhanced Connectivity & Collaboration across functions, geographies and BG's gas chain, driving improved knowledge sharing, deployment of remote specialist expertise and proactive monitoring & intervention to create value;
- Reduced decision making cycle time through improved quality and access to real-time business data via performance dashboards & improved collaborative behaviours and processes: and
- Improved recovery, enhanced production rates and greater operational efficiency through the application of new technologies and collaborative processes to support the Production Excellence Initiative

In addition to this activity a number of future opportunities have been harvested from the process which will form the basis for the future hopper of technologies and activities for the iValue programme.

As mentioned the initial focus is on E&P, however engagement with other business segments including LNG and power has also taken place. These are less mature than E&P and are initially examining the strategic approach and the potential value of the digital oilfield approach. Synergies with these other segments will be explored to identify opportunities to combine capabilities, e.g. could remote equipment monitoring of turbines in E&P and Power potentially be managed together?

### **Achievements in 2007**

In 2007 the iValue Programme has undertaken a series of tactical implementations of pilots to build a track record of delivery and experience of the technologies and associated challenges. These include:

- IPMS Modules
- ICE's and associated video conferencing technologies
- BG Connect

This is in conjunction with the global roll-out of PDMS across assets. Currently an assessment of the impact on work processes and the associated benefits of the pilots for IPMS and ICE are being undertaken. Skills and competency matrices will be developed for each of the capabilities to assist with addressing the requirements for potential global roll-out to assets. In addition, BG Connect has now moved into a global roll-out phase based on the successful pilot implementation.

More details on the Drilling ICE deployment in Aberdeen can be found in SPE Paper 112121, 'Implementing Drilling Centres in a high pressure environment.'

In summary, over the last 9 months the iValue Programme has successfully applied its 'fast follower' approach and has gone from a standing start to having deployed real-time technologies and built an associated collaborative environment. Currently a series of asset based drilling and operational ICE's together with expert support ICE's located in BG's HQ in Reading, UK are planned for 2008. This will be associated with the continued global roll-out of PDMS and ongoing functional development and deployment of IPMS.

### **References:**

SPE 100113 Advanced Collaborative Environments in BP, T. Edwards, M. Saunders, and K. Moore-Cernoch, BP

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