Innovation in the Shale Energy Industry
An analysis of how small companies can best deliver a new product or service to the industry
Agenda

• Industry update
• Project overview
• Best practices benchmarking
• Key findings to date
• Next steps
Global Strategic Impacts

Estimated U.S., Russia, and Saudi Arabia petroleum and natural gas production
quadroillion British thermal units

- United States
- Russia
- Saudi Arabia

- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014

EIA

THE KLABER GROUP

ENERGY, ENVIRONMENTAL AND ECONOMIC STRATEGIES FOR BUSINESS
U.S. Natural Gas Production
Natural Gas Development
Marcellus leads U.S. in total and per-rig production

Source: EIA and Klaber Group
Supply has driven prices down - even further in NEPA

Source: EIA and Klaber Group
Project Overview

Primary outcome:
• Insights into shale company decision-making that will further improve SGICC’s ability to assist Pennsylvania-based technology companies in becoming thriving Pennsylvania businesses

Tasks:
• Holistic review of companies engaged with SGICC and MSC
• Benchmarking
• Interviews
  – Technology Users
  – Technology Producers
  – Technology Observers
• Reporting

Today’s Event – Report on progress and solicit additional input
Industry Segments

**Upstream**
Well pad siting and construction
Drilling, casing, hydraulic fracturing, completion

**Midstream and Pipelines**
Siting gathering and interstate transmission lines
Installing and operating pipelines
Installing and operating compressor stations

**Downstream**
Natural gas use in:
Electric generation
Residential, commercial and industrial heating
Petrochemical industry
Other manufacturing
Pennsylvania Focus for SGICC

Pennsylvania attributes:
- World class oil & gas resources
- Associated supply chain opportunities
- 12.7 million people
- Ranked 3rd in # of degree-granting institutions at ~260, plus

Yet, need to acknowledge and leverage geographic reach of the industry.
Are technology companies anticipating industry’s greatest needs?

Disproportionate number of companies focused on water treatment relative to industry ‘pain’.

Key is to *lead* instead of *lag* industry needs.

Beware of role technology company plays in driving regulatory requirements on industry and future customers.

Or are they advancing a solution in search of a problem?
Submissions to MSC Tech Portal
Q1-2 2013 (n=43)

By technology type

By home state
Benchmarking Approach

• Industries:
  – RFID in manufacturing
  – Mobile technologies in logistics
  – Cloud computing in manufacturing
  – Big data in retail
Benchmarking Key Findings

1. Justify the benefits
   - Cost
   - Quality
2. Assess readiness to adopt
3. Vendor fit
4. Task-technology fit (including hardware/software fit)
5. Ease of use
6. Top management support
7. Policy compatibility /dynamic impact
8. Formal training
9. Periodic review
Major take-aways from study, to date

• Diversify
• Target sales & marketing *in parallel with* technology development
• Attentive to customer needs and pressures
Diversify

• Diversify across at least one of the following:
  – Customers in sector
  – Segments of industry
  – Basins – domestic and international
  – Outside of industry

Set goals for diversification and direct sales and marketing to reach goals
Case for customer diversification

**Dynamic group of companies in PA's Marcellus**

- **2010**
  - Blue: 38 companies in Marcellus 2010 and 2015
  - Red: 23 companies in Marcellus only 2010 or 2015

- **2015**
  - Blue: 38 companies in Marcellus 2010 and 2015
  - Red: 30 companies in Marcellus only 2010 or 2015
Targeted Sales and Marketing

• Don’t underestimate complexity of target market:
  – Geographic footprint
  – HQ location and decision-making
  – Satellite locations and decision-making
  – Career-long relationships
  – Reassignments within multi-state companies
  – Job changes among companies

• Avoid:
  – Adding momentum/credibility to regulatory drivers of your technology
  – Using branded technologies that only you will understand
Attentive to Customer Needs

- Commodity-related
- Regulatory
- Legislative
- Economic/Shareholder
- And many others
Anticipate industry cycles

Current price concessions in the news:

Marcellus suppliers being asked to take 10 percent cuts as gas prices fall
*Pittsburgh Business Journal, 2/10/15*

Halliburton takes hit from lower activity, price concessions
*Petroleum News, 4/26/15*

Oil field service companies to bear brunt of price collapse
*Christian Science Monitor, 4/30/15*
Most Companies Neglect Value Proposition

Examples of clear value propositions:
- Lower annual operating costs
- Increase productivity per well
- Increase safety performance resulting in lower overhead costs
- Decrease barriers to productivity, thereby increasing profitability

Examples of unclear value propositions:
- Model X3OBi™
- Proprietary technology
- Instrumentation includes bells and whistles
- Green technology
- Avoids unwanted consequences
- World’s premier developer
Regulators current impact markets – know your opportunities and risks

Federal agencies

One state’s agencies

Multi-jurisdictional agencies
Public Policy Climate to Remain Challenging

• Determine how your company will stay current on government actions
  – Executive branch/regulatory
  – Legislative branch
  – Local government actions/ordinances
  – Key judicial decisions

• Follow company reactions, including shareholder and media communications

• Consider engagement, advocacy and/or trade association role
Summary and Next Steps

- Diversify along at least one axis
- Elevator pitch and company description – develop around the value to the customer, then refine, refine and refine
- Allocate significant time and resources to obtaining the first, second and third customers
- Develop rapid reaction culture and protocols, including monitoring of key government-driven developments and changes at customer companies

- Schedule phone interview if interested in contributing to final report.  kklaber@klabergroup.com
Thank You