Intro
- Large scale project == Scale about scale of project?
  - Dealing with lots of data
  - Keep priced software (Petrel) $50k+ 
  - $50K of valuable tools
  - Apps open sourced if they need approval
  - Do include "fun" plugins (music data, unaramole)

Oil
- Find it -> Surveys, geological
- Drill it -> design engineering / equipment
- Make it -> make the $$

Techs
- Platforms
  - Collaborating clients' central data keep
  - Plugins -> extend functionality
  - Clients incorporate IP into products
  - Internal not direct sale

Info
- Seismic surveys -> looking at earth surface
  - Vibrator truck, sound waves from far ocean
- Fluid modeling
  - Layers, porous rock, reservoir change modeling during production
- Leave behind some oil because it's not cost effective

- Future increase in getting hard to reach oil, "cost effectiveness"
- Hydrocarbon journey -> video online, Pathway

- Fully integrated software platform
  - End to end control of the process
challenges

• large # of data → how do you share? keep consistency?

• integrating diverse systems → working for different pieces of hardware → different systems → limited knowledge of problems due to IT constraints, network security

• security issue probably be an issue

• can only get data at surface

• intelligent completions

• sensors in the well to control flow

• understand underground activity

• have to be replaced frequently but sometimes it’s not feasible

• way to disconnect non-functional equip.

System

• data routed to office → sometimes no internet, sometimes satellite

• not much control of initial data collection

Query

• might need to format of their info

• how do you get all to the plate it needs to be

• trying to find equip

• want all data in one place

• what do you do if action is required?

• raise in the system

• confidentiality a concern

• how to change system

• easy integration is key
Quality
- Efficiency
- Recovery
- Security
- Extensibility
- Testability

Problem
Emergency/Event Resource Management
- Where are resources?
- Relevant data is collected
- Data analysis triggers event
  - maybe multiple steps
- Track success
- Learn from events & improve efficiency

Connectivity
- What happens in between, how do we guess
- Connected to the internet
- Visibility of data dispersion

Framework is the goal
Emergency response is the way to test
Mapping protocol
Want to be able to add to it (Platform)
Platform should be extensible
- Don't seem to care about what type of software we use
- Not necessarily automated (reach goal)
- Need tools to understand data so user can make a decision
realistic focused on the design framework
long term needs of systems
succeed
slow down
lose data
go down
tie in with available systems
Every two weeks
want us to decide what's most important
if a system is disconnected what does it do with its data
- presence data
- conversely, what happens to the input systems

if we use open source, document what it is & how we use it
- should be removable

how much can you see?
- scalable vs. quality for certain aspects of the system

- grasp of the problem
- brainstorm ideas to solve it

Moving forward
- thinking about pieces of data available
- what parts

- initial thoughts on problem
- questions that linger
- concerns/comments