



Summary

This course will describe how value is created from creativity and innovation, and provide participants with practical tools and methodologies to become more creative and to make innovation actionable. Both creativity and innovation are learnable skills, with step-wise approaches possible. Participants will leave with an action plan that can be immediately used when they get back to work.

Learning Outcomes

Participants will learn to:

1. Understand fundamentals of creativity and innovation, and how they can be used to create value (as opposed to not using them).
2. Prepare themselves and their teams for creative thinking, and to improve their creative skills.
3. Implement concepts of creative thinking, especially the aspects critical to innovation (such as associative thinking and disruptive thinking).
4. Improve questioning skills, effectively employing both descriptive and disruptive questions.
5. Apply the 5 critical aspects of creative thinking, and determine their current state in each one.
6. Learn to challenge their own thinking and their "status quo" mindset.
7. Understand the various types of innovation and how they can be applied in E&P.
8. Learn the 5 behaviors of innovative business leaders. They will assess their own level in each, focusing on where they can improve, and learn to leverage other people with complementary skills.
9. Use the concepts of diverse crowd wisdom.
10. Apply the creativity/innovation processes as part of an outcome-based approach to opportunity pursuit within their organization.
11. Engage stakeholders in addressing.

Duration and Training Method

A two-day classroom course. This course is interactive and highly practical. It uses group discussions and exercises to develop creative thinking techniques, models and frameworks that can be applied to real life oil and gas industry situations.

Who Should Attend

This course is designed for E&P professionals who are charged, either individually or as team leaders or members, with using creative thinking to solve current problems, conceptualize future opportunities and/or design future businesses (whether known or not). It stresses breaking away from the "business as usual" environment.

Prerequisites and Linking Courses

There are no course prerequisites. Two short diagnostic assessment quizzes will be provided and should be completed before class. Participants should identify and be prepared to discuss a current innovation



N840: The Fundamentals of Creativity and Innovation with Applications to E&P Organizations

Tutor(s): Henry Pettingill and Niven Shumaker

2 Days

Competence Level:
Not Applicable



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issue at work, one where present "business as usual" practices will not work and for which the future is unpredictable.

Course Content

Part I. Introduction & Concepts

Definition of Innovation and Creativity

a. Inventing the future vs. solving the present

The case for Business Innovation

The Innovator's Paradox

a. Past vs. future

b. Sustaining vs. disruptive

How does Innovation create value?

Structural framework of the E&P industry and how it translates into Innovation

a. Historic innovation milestones - highlights

b. Types of innovation and creativity tied to major events

c. Types of innovation (case studies)

Part II. Creativity

Five Steps of Creativity (take Diagnostic Test)

a. Building your creative environment (warm-up exercise)

b. Questioning skills: Descriptive and Disruptive (exercise)

c. Associative thinking (examples)

Creativity: types (activity)

Group creativity and the wisdom of crowds (activity)

Primary references: J. Linkner, S. Johnson, J. Surowiecki, H. Gregersen

Part III. Innovation



The Five Types of Innovations that can create value: Invention, Process, Relationships, Collaboration, and Boundary-hopping

The Five Discovery Skills of Innovators (take Diagnostic Test)

Discovery vs. Delivery skills

Disruptions and paradigm shifts: internal vs. external, types of disruptions

The role of constraints on creative thinking

Primary references: J. Dyer, C. Christensen, J. Matson

Part IV. Implementation of Innovation

Defining the "Innovation Process"

Creating the environment for Creativity and Innovation

Inventing the future

- a. Defining outcomes: what does success look like?
- b. Employing the Innovator Skills (individually and in teams)
- c. Looking for disruptions and capitalizing on them
- d. Actionable steps
- e. "Monetizing" innovation: creating value from creativity and innovation

Challenges and polarities in implementing Innovation

Primary references: Koulopoulis, Christensen, Dyer et al., Linkner

Topics for Case Studies, Exercises and Activities

A number of examples will be used during the course to demonstrate the applicability of Creativity and Innovation to real-life situations. These may include:

Case Studies

1. First post-Macondo offshore permit: a novel Independent-led consortium leads the industry back
2. Sustainable Colorado oil and gas development: from confrontation to collaboration
3. The advent of 3D seismic in E&P
4. The emergence of Shale Plays
5. The birth of Nautilus: reaping value from a market disruption and a new business model

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6. Petroleum Helicopters Inc. becomes the dominant Lifeflight provider
7. Cell phones and torpedo guidance: the invention and implementation of frequency hopping

Innovation Types & Skills

1. Relationships, Collaboration, Outcome-Driven Innovation, Process Innovation
2. Relationship Innovation, Outcome-Driven Innovation, Sustainability
3. Sustaining Technology, Market Disruption
4. Disruptive Technology and Market
5. Market Disruption, Networking/Relationships, Collaboration, Process Innovation
6. Market Disruption, Association & Connection, Industry Boundary-Hopping
7. Boundary-Hopping, Associations, Networking, Paradigm shift

Additional Exercises and Activities

Creativity: types (Tri-bond game)

Questioning Skills (Exercise)

Group Creativity (“Wisdom of Crowds” exercise)

Innovative characteristics, idea propagation

Multi-lateral negotiation (Exercise)

Bias and uncertainty, intuition (Peak oil example)