

Risk Management in the Energy Industry

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Unit 4: Scenarios and Simulations



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Unit Learning Objectives

- ◆ Upon successful completion of this unit, learners will be able to identify how to use web-based simulation and collaboration software and apps, as well as mindmapping and project management to predict levels and types of risk, both known and unknown. This is a discovery process as well as a reflective one that involves classification.

Collaborating for a Solution

- ◆ **Using Collaboration Tools to Tackle Problems**
- ◆ Slack (<http://www.slack.com>) -- Free for small teams
- ◆ Trello (<http://www.trello.com>) – for individuals and teams who need a work pipeline (free)
- ◆ MeisterTask (<https://www.meistertask.com/>) Intuitive project and task management – and incorporates mind-mapping (mindmeister).

Mindmapping For Collaborative Scenario Development

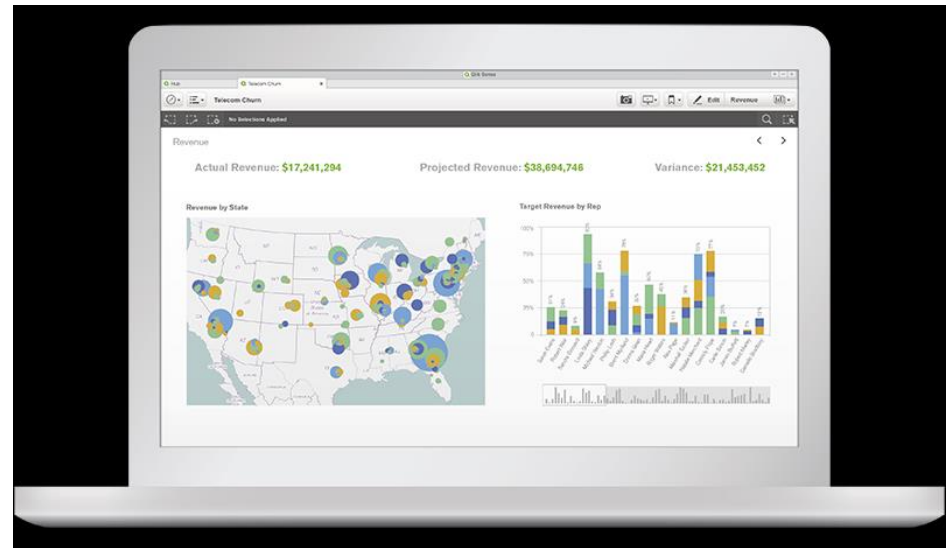
- ◆ MindMeister (mindmeister.com) – 3 maps free
- ◆ Define the elements
- ◆ What can happen?
- ◆ Who is impacted?
- ◆ Who can do anything?
- ◆ When?
- ◆ Where?
- ◆ More Mind maps
- ◆ Coggle <https://coggle.it/>
- ◆ MindMUp <https://www.mindmup.com/>

Simulations

- ◆ What is the information that you need?
- ◆ What is the situation?
- ◆ What are the variables?
- ◆ What can be controlled?
- ◆ What is the flow? (mapping / workflow)
- ◆ How to get started: software
- ◆ Dealing with complexity
- ◆ Possible outcomes: listing / prioritizing
- ◆ Quantifying possible consequences

Simulations

- 🟢 Use Qlikcloud.com
- 🟢 Spotfire.com (not free, but has excellent pre-built apps)



Future Directions: Blockchain

HOW DOES BLOCKCHAIN WORK?

One party requests a transaction.



Requested transactions are funneled into a P2P network and broadcast to each individual computer (or node).



Individual nodes receive the request and validate the transaction using an algorithm.



Once the block is added to an existing chain, transactions are complete and permanent.



Approved transactions are represented as blocks and added to a public ledger.

Blockchain Basics

- ◆ What is Blockchain Technology? A Step-by-Step Guide for Beginners
- ◆ <https://blockgeeks.com/guides/what-is-blockchain-technology/>
- ◆ Blockchain Fundamentals:
https://youtu.be/OSriZ_SeTfk

The Blockchain Advantage: Game-changer for Supply Chain

- ◆ “Every time a product changes hands, the transaction could be documented, creating a permanent history of a product, from manufacture to sale”
- ◆ Vorabutra, Jon-Amerin, (2016) Why Blockchain is a Game-changer in Supply Chain Management Transparency. Supplychain247.com
- ◆ https://www.supplychain247.com/article/why_blockchain_is_a_game_changer_for_the_supply_chain



Blockchain vs. the Counterfeits

BLOCKCHAIN FOR DRUG TRACEABILITY



The Blockchain Advantage: Game-changer for Supply Chain

- ◆ Potential applications: Tracking manufactured goods, especially those whose failures would have devastating impact on the supply chain, such as electronic components and sensors used in the IIoT.
- ◆ Products and raw materials that are currently often stolen or hijacked (equipment in remote locations, tankers, products, etc.)
- ◆ Potentially can be used for authenticity of data as well (production reports, etc.) to avoid falsification