

# This Might Hurt a Bit: *What Every Organization Needs To Learn from the Pacific NW Cryptocurrency Crisis*



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# Experience gets ingrained- education gets forgotten





# Shared Experiences





# Common Paths....

Write down every job title you have held  
from 18 years old until the present....

# My Path....

Waiter	Nuclear Utility Operator	National Training and Safety Director
Floor Captain (Flambe-ist)	Pu Processing Lead Control Room Operator	VP, Process Improvement Programs
Sommelier (Wine Steward)	ALARA Program Manager	Total Quality Environmental Programs Director
Fire and Flood Restorator	Hazardous Material Shipment Manager	Cause Analyst, Event Evaluator
Unique Articles Restoration Manager	ESH&Q Director	Senior Performance Improvement Specialist



# What's This Mean?





# The Most Important Title....



# Why HPI/HRO/RCA Matters to Me



In Nine Years: From our family's care *into your company*

*Are you going to care enough about him that you focus on what you want **FOR** him rather than just what you want **FROM** him?*



# *Continuously improve performance by adequately managing risk*



Hilcorp Energy Company



CH2MHILL



CHELAN COUNTY



Pacific Northwest  
NATIONAL LABORATORY



Weyerhaeuser



INTERNATIONAL



PAPER

Chobani



# One of our greatest challenges.....

- Pick a partner-30 seconds—remain silent
- Answer these questions about them—with ZERO verbal discussion:
- Vehicle of their choice—what *would* they own?
- \$500 gift certificate, VISA logo card-where are they shopping?
- Band or Artist they listen to the most



# Basic Needs and Individual Wants





# A Tale of Two Mindsets



Protective Safety  
Tombstone Mentality

*Risk Averse*

“Variation Is Your Enemy”



Productive Safety  
Milestone Mentality

Risk Competency  
(Drive Safely)

“Variation is Your Reality”



# Putting it Another Way...



Error  
and  
Aversion

Insights,  
Innovations  
and  
Improvement

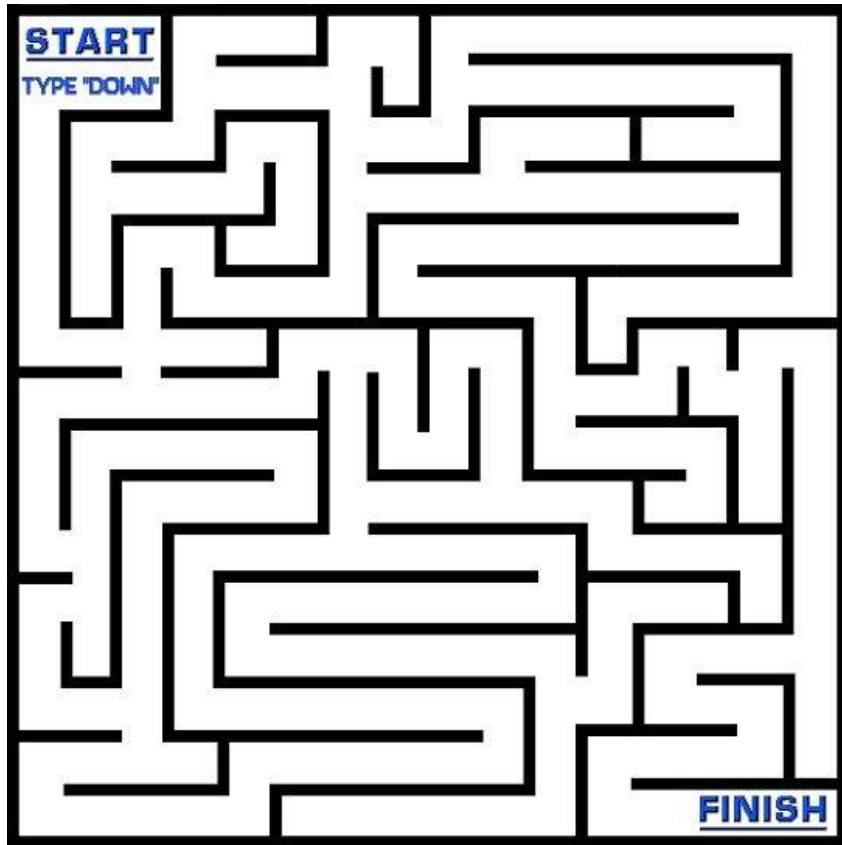
# Realities at the Working Level



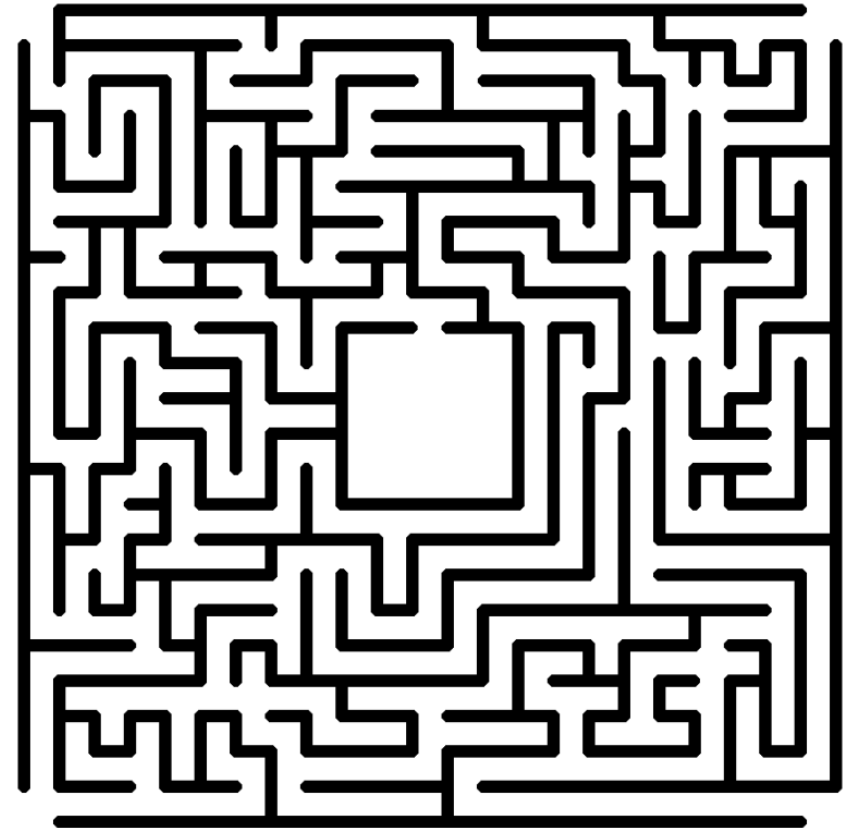
*“Due to the nature of our work, its impractical to proceduralize everything on the front end—but we need to standardize our approach to the changing conditions and uncertainties we encounter every day,” Darren, I&C Tech*



# Incident Becomes a Crisis....



Incident



Crisis



My friends and I need  
electricity to our rental  
house.  
Looks like we're going to  
need about a Megawatt.



# Types of Crypto-Currency





# Cryptocurrency Transactions



Carol -> 2 BTC -> Ali

"aa314e08a642f5be3857276ecb4a4085a33b916f84aebef"



## Tracking the Transactions



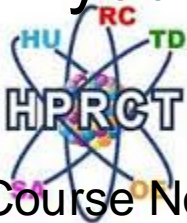
# Where's the Money?

- You have to be the first miner to arrive at the right answer to a numeric problem. This process is also known as a proof of work.
- On average, someone will generate acceptable proof of work every ten minutes, but who it will be is anyone's guess.
- Miners pool together to increase their chances of mining blocks, which generates transaction fees and, for a limited time, a reward of newly-created bitcoins.



# Where's My Money?

- What is *"the right answer to a numeric problem"*?
- The good news: Miners are not solving difficult mathematical problems. They are trying to be the first miner to come up with a 64-digit hexadecimal number (a "hash") that is less than or equal to the target hash. It's basically guess work.
- The bad news: Guesswork requires a lot of computing power in order to get there first. To mine successfully, you need to have a high "hash rate".





# Pick a Number

- Without sharing with anyone else—silently select a single two-digit number between 10-99
- Select a second number and place away from the first two digit number (0-9)



# Results

# 36

Those with 36 exactly get the 'prize'

Those with  $>36$  are eliminated

Those with  $< 36$  are in the running

Those with  $<36$  but a NONCE win the 'prize'



# Block #490163

Summary	
Number Of Transactions	1768
Output Total	6,903.29862618 BTC
Estimated Transaction Volume	843.56466563 BTC
Transaction Fees	1.41094004 BTC
Height	490163 (Main Chain)
Timestamp	2017-10-16 15:29:07
Received Time	2017-10-16 15:29:07
Relayed By	AntPool
Difficulty	1,196,792,694,098.79
Bits	402713392
Size	999,263 kB
Weight	3669.587 kWU
Version	0x20000000
Nonce	731511405
Block Reward	12.5 BTC

Number Only Used Once

Hashes	
Hash	00000000000000000000c508bc2ada8ebc62cf1c69cb86a163d9a99abad87599b6
Previous Block	000000000000000000000590860e05a1ab8746a40b29a3c693613dd1d5627a7ea
Next Block(s)	00000000000000000000060cf40270bcb84e5cb40573642d37c56d089f3148399a4





# Hidden Risks and Delayed Consequences



This image was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy.

# Brave New Risky World



- 1 employee versus 1200 employees
- 2.1 Mw/h compared to 1.2 Mw/h packing plant
- Zero investment in capital expense to upgrade and maintain electrical service
- CEO and Transmission Manager—CNN, MSNBC and Fox News: *“We have the cheapest electricity in the country and crypto currency is causing significant safety risks for our community”*
- Next Morning: 71 Applications for 1-5 Mw service to homes and businesses (whole county uses 185 MW)



# Lesson: Manage Reality by Recognizing Risk

*Most organizations let consequence be their only teacher, rather than curiosity and genuine interest*

***Danger:** When confronted by a new reality, dismissal and denial are natural organizational brake pedals*

*“If we just ignore this long enough...it’s a one-off, an anomaly...this too shall pass....our experts tell us”.*



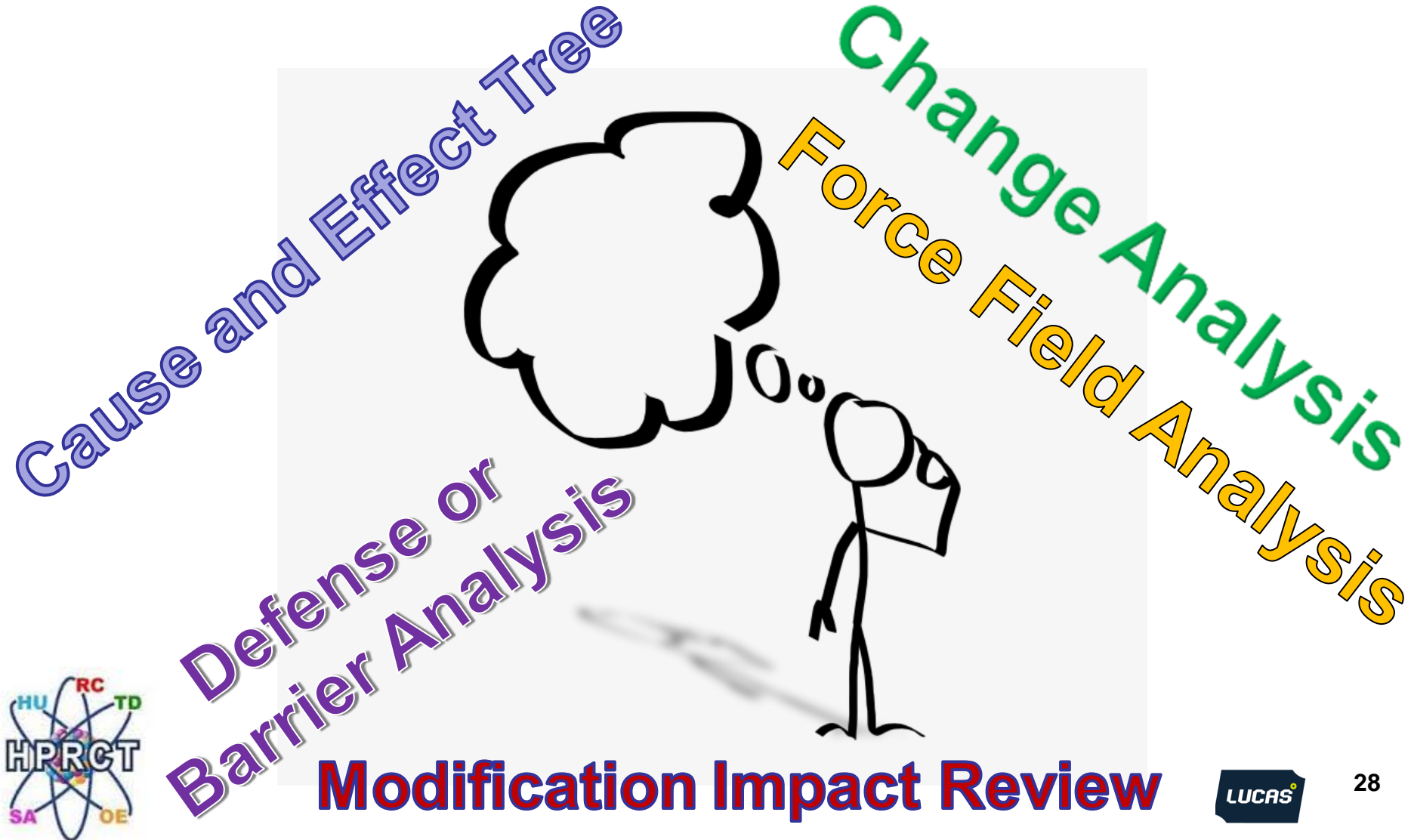


# The Real Lesson

- Organizations are like individuals—they only have two pains: the pain of regret and the pain of discipline
- Engage employees using Quality Management Tools to conduct Pre Mortems and After Action Reviews *before pain is experienced*



# Increasing Engagement



# Pre Mortem

- Pre Mortem: *Do not treat this as a response to an operational incident but as a project to manage*
- *Operational incidents are deviations from your established expectations—projects are opportunities to create, shape and manage new expectations*
- *Don't 'deconstruct to reconstruct'—put your HEART into it*





# HEART Resolution Exercise

Human Error Assessment and Reduction Technique (HEART)

Crypto-Currency Process—Electrical Power Sales Contracts



Summarize Critical Step(s)	Assess Error Likely Situation	Foresee/Formulate Consequences	Evaluate and Determine Defenses and Controls	Responsible Person(s)
1.) Accept Application for Service	Customer unaware of Power Sales Requirements	Installs Ant farms without agreement-High density loads increase, safety and equipment life risks increase	Policy is explained to customer at time of application, emphasis is placed on unsafe, unapproved installation of equipment and sanctions, signature acknowledges agreement	Customer Service Rep, Manager Customer Service
2.) Application for Industrial Use of Mining Operations	Underestimated load for mining operation based upon Ant Farm wattage which does not include HVAC and Substation upgrades	Risk and economic costs are shared by rate payer, not by mining operation (externalities not considered)	Increase the per Kw/h initial cost of Power Sales contract for industrial siting, place moratorium on future operations until substation forecasting is complete	Distribution, General Counsel, Field Engineers





Don't Rob the People in Your Organization of the Opportunity to Help You Succeed

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## Why This Should Matter to You



*Organizations will improve their performance when they stop focusing on what they want from their people start focusing on what they want **FOR** their people.*