

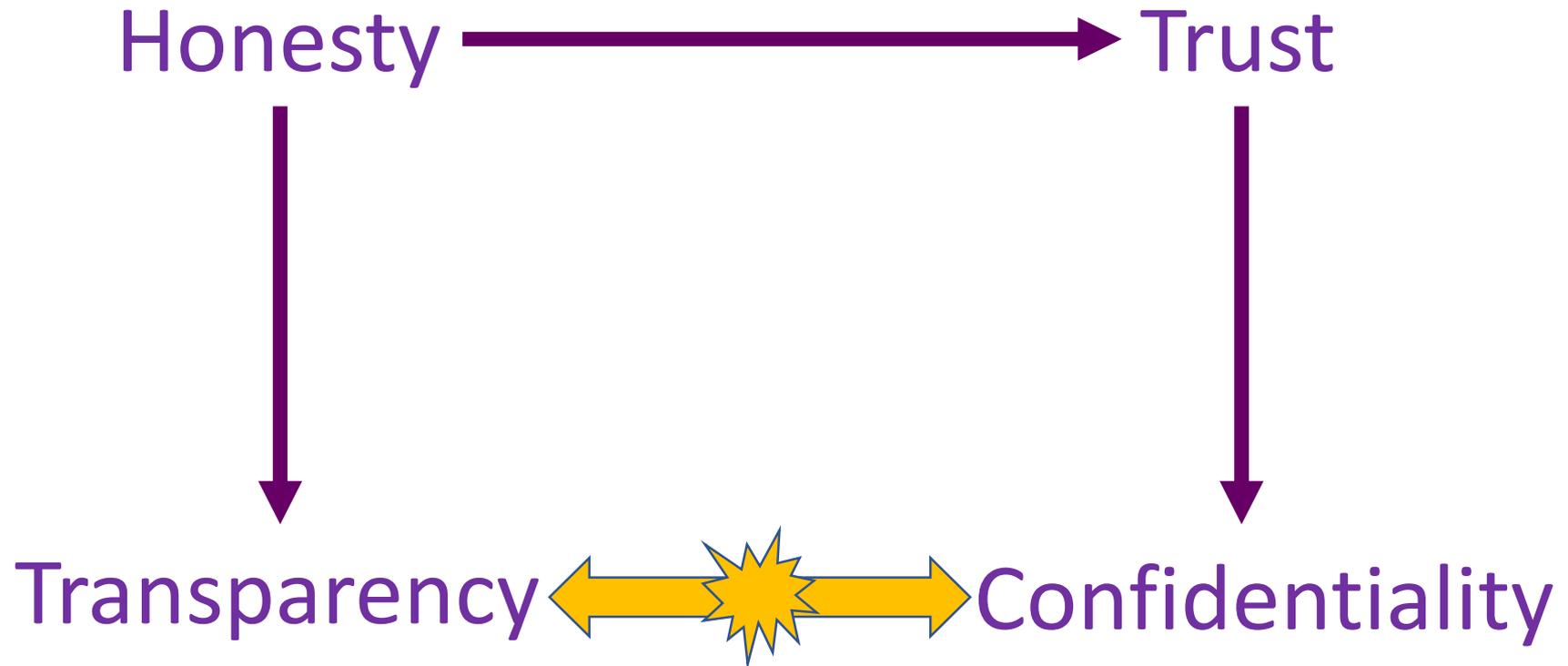
Engineering Ethics, the Law and Human Consequences:

A Framework for Making Better Ethical Decisions in a World of Conflicting Demands and Differing Agendas

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Reconciling Potentially Conflicting Ethical Principles



Legal but Unethical?



Kelo v. City of New London

Illegal but Ethical?



Aspirations vs. Practice and Context



Facts of the Case – Scene 1

Your client is an oil & gas producer who retains you to do a reserve study for proposed new well development in Weld County Colorado. The well development will rely on hydraulic fracturing. While the individual who retained you makes no explicit demands or suggestions regarding what numbers you might come up with, he does signal his hoped-for expectations by telling you the range of numbers used in their exploratory business plan and what kind of number it will take to “keep investors on board and their well crews employed”.

Upon delivering your report to the client, your contact indicates in a neutral voice that your bottom line number is “not too far out of the ballpark they were hoping for”. He tells you that to make the project work given your estimate, they will probably have to take “a sharper pencil” to the cost side of things, implying without expressly saying that they will be looking at less costly alternatives on issues such as noise mitigation and waste water disposal.

He also tells you that they have a history of developing wells where the actual production numbers tend to exceed the estimates that were made going into the project and asks whether there are any further things you might look at or consider in order to “shore up” your estimate.

Facts of the Case – Scene 2

You are asked to present your report at a meeting of the management committee which includes people from both operations and finance who will make the final go / no-go determination on the project. The committee then discusses the report in your presence. A couple of the finance people raise concerns about the cost side of the project. At least one of the operating people suggest some ways to “cut a few corners” in the area of environmental mitigation. Another suggests that they’ve had success controlling costs on other projects by minimizing the amount of cement used to seal in the steel casings.

The head of committee ends the meeting by “cheering on” the team to find a way to make it work, and emphasizes that “there are a lot of people, both out in the field and here in the office, who are counting on this project making money.”

Facts of the Case – Scene 3

You are asked to attend a public hearing before the county commissioners at which the company expects to get the final approval for the project. You are asked to be there in the event that one of the commissioners or someone else has any questions about the extent of the accessible reserves and hence the potential productivity of the project.

While the project meets the minimum set back requirements, as finally designed it is adjacent to fairly dense residential subdivisions on two sides. The hearing is attended by an animated and anxious crowd of residents from the adjoining neighborhood. It is obvious from some of their questions and comments that they have had a prior bad experience with a well site that allegedly led to ground water contamination and a methane caused house fire.

At one point, one of the residents, a mom with one of her children in tow, addresses you directly with this question: “You’re an engineer . . . can we be assured that this company is willing to do whatever it takes to protect the public health and safety . . . to protect our homes, our drinking water, the safety and health of our children who live and play here?”

Scope of Decision Impact



You



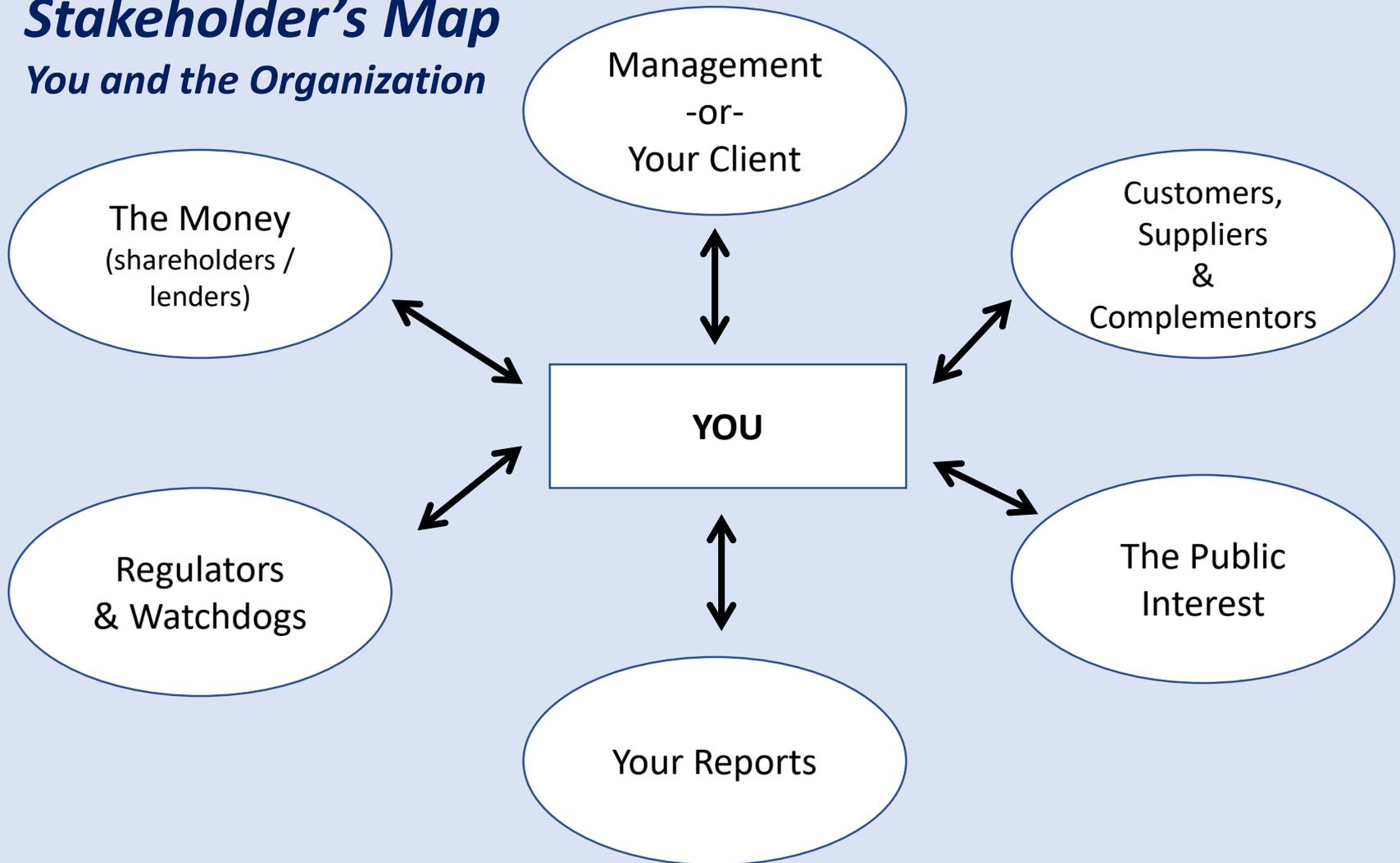
The Organization



The Community

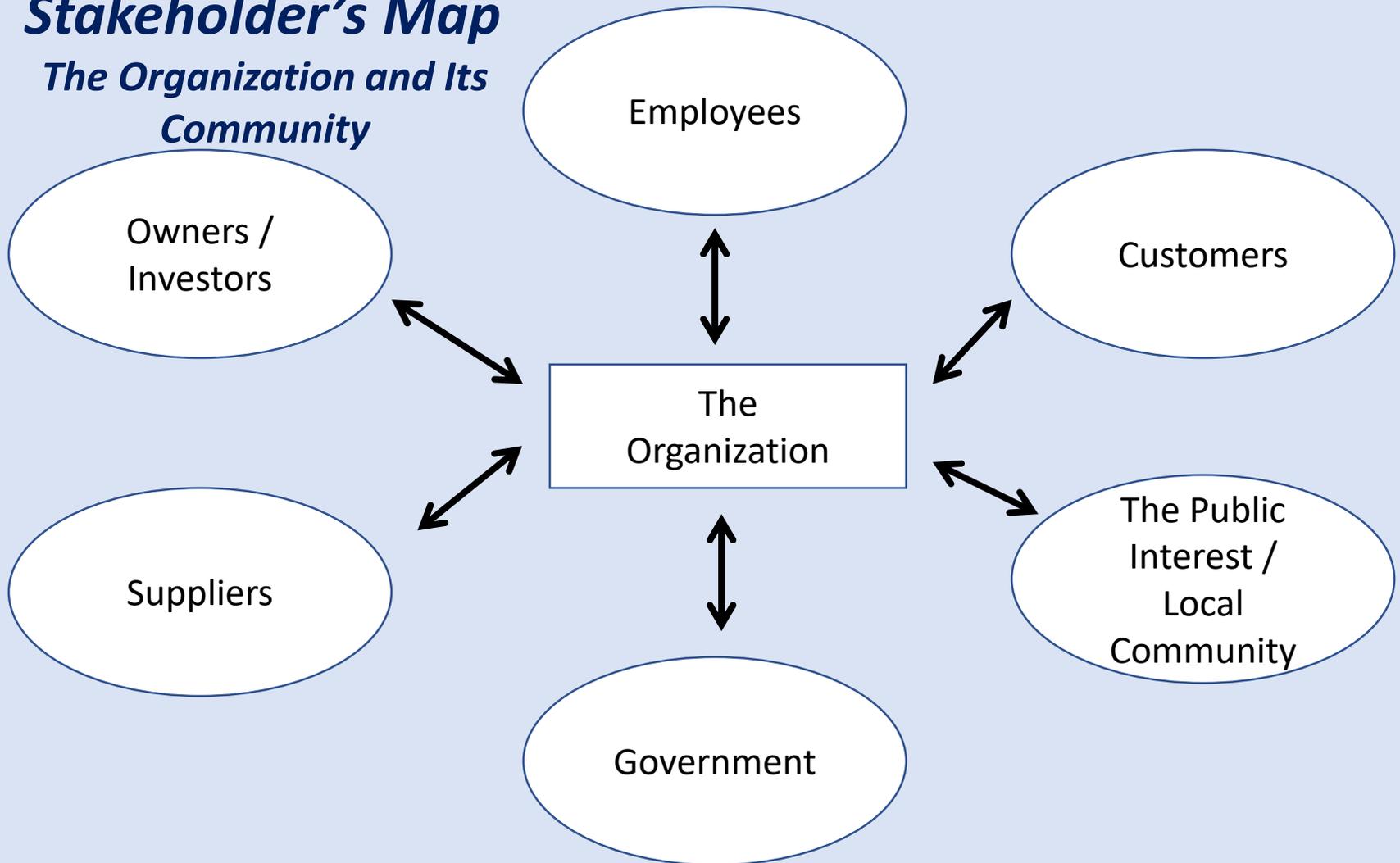
More Interests at Stake Means More Ethical Complexity

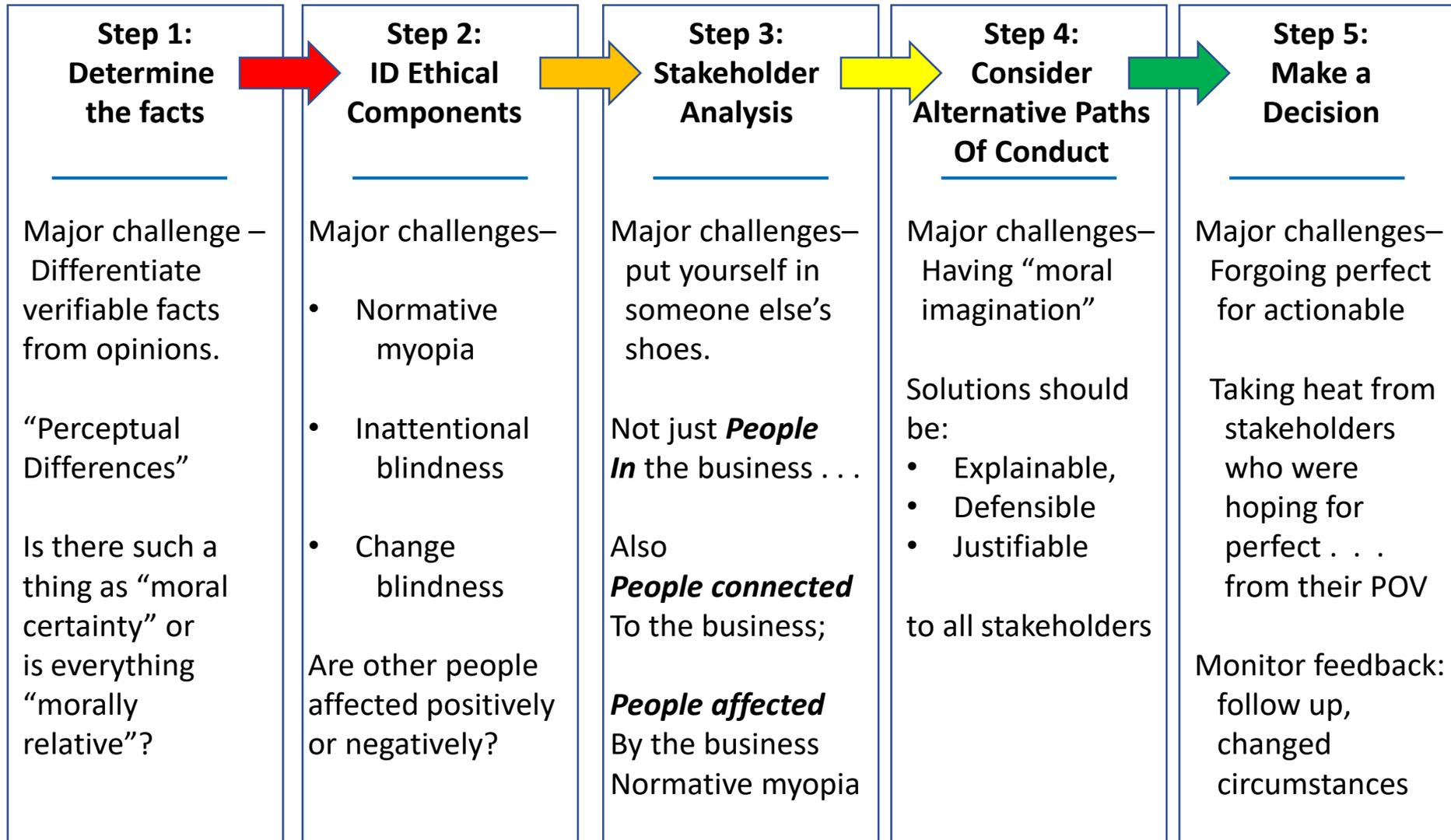
Stakeholder's Map ***You and the Organization***



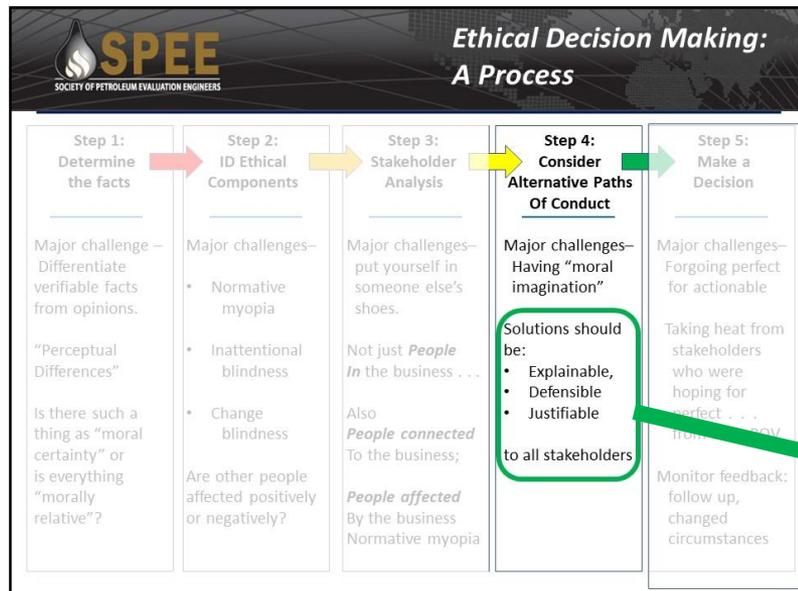
Stakeholder's Map

The Organization and Its Community





Key Take-Away



Solutions should be:

- Explainable
- Defensible
- Justifiable

to all stakeholders

Questions and Follow Up Discussion