



## Venturing for Social Good

### Session 2– Wicked Problems and Grand Challenges

“In a gentle way you can shape the world.” – Mahatma Gandhi

The process of making a positive impact through venturing starts with finding a problem that you’re passionate about solving. At a minimum, you can expect to spend a few years working to develop an impactful solution, so it’s important to choose something that you really care about. It’s also important to understand that most societal and environmental problems are very difficult to solve.

In fact, two terms that are often used to describe societal and environmental problems hint at this difficulty – wicked problems and grand challenges. This video discusses wicked problems and grand challenges. It also provides several examples to get you thinking about the specific problem or challenge you might want to address through venturing.

A **wicked problem** is a social or cultural problem that is difficult to solve because of its interconnected nature with other problems. For example, in communities overcome by poverty, there tends to also be a major lack of education. And in areas where there is a lack of education, there also tends to be a lack of access to quality healthcare, which can prevent individuals from working, thereby contributing to poverty. In this example, the problems of poverty, education and healthcare are interconnected, forming a negative cycle that is very difficult to break.

Interconnectivity is just one of the characteristics of wicked problems that make them difficult to solve. According to Horst Rittel, one of the first theorists to research wicked problems, there are ten characteristics that define wicked problems:

1. *There is no official formula for a wicked problem.* A wicked problem in one part of the world may have completely different causes and potential solutions than a similar wicked problem in another part of the world.

2. *It is difficult or impossible to measure or claim success with wicked problems.* Each problem is circular in nature, meaning that it contains many interlocking issues that all affect each other.
3. *Solutions to wicked problems can only be good or bad, not right or wrong.* Completely solving a wicked problem is highly unlikely, so it is more important to focus on improving the situation rather than eradicating it.
4. *There is no template to follow when tackling a wicked problem.* Teams approaching wicked problems must keep an open mind because every solution offered exposes new aspects of the problem, requiring further adjustments.
5. *There is always more than one explanation for a wicked problem.* The explanation varies depending on the perspective of the designer proposing the solution.
6. *Every wicked problem is a symptom of another problem.* Since wicked problems are interconnected by nature, a change in one problem will have an impact on another.
7. *No solution of a wicked problem has a definitive, scientific test.* Wicked problems develop because of humans, and science exists to understand natural phenomena.
8. *Solving a wicked problem frequently is a "one shot" design effort.* There is little opportunity to learn by trial and error because every attempt to solve the problem leaves traces that cannot be undone.
9. *Every wicked problem is unique.* Each problem has its own causes unique to the culture and location it exists within.
10. *A designer attempting to solve a wicked problem must be fully responsible for their actions.* An extensive amount of research and care is necessary to carry out a possible solution because it will have a direct impact on people's lives.

Yet another characteristic of wicked problems is their massive scale. For example, an estimated 800 million people around the world live in extreme poverty, meaning that they make do on less than \$1.25 per day. Lifting so many people out of poverty is clearly a grand challenge.

The term **Grand Challenge** is often used by governments and policy makers to refer huge challenges such as improving health, education, and environmental outcomes worldwide through the use of technology and innovative design approaches. From governments to private companies, research

universities to foundations and philanthropists - there are many actors working to identify and pursue solutions to these challenges so that they can make a positive social impact. Grand challenges are also the domain of social entrepreneurs who seek to develop revenue-generating nonprofits and mission-driven social benefit companies capable of producing a sustainable positive impact.

The National Academy of Engineering has identified 14 grand challenges for the 21<sup>st</sup> century that need to be solved through engineering and technology. These include: making solar energy economical, providing energy from fusion, developing carbon sequestration, managing the nitrogen cycle, providing access to clean water, restoring and improving urban infrastructure, advancing health informatics, engineering better medicines, reverse-engineering the brain, preventing nuclear terror, securing cyberspace, enhancing virtual reality, advancing personalized learning, and engineering the tools of scientific discovery. You can learn more about these grand challenges by visiting the NAE's website – [www.engineeringchallenges.org](http://www.engineeringchallenges.org)

Another set of Grand Challenges is reflected in the United Nation's Millennium Development Goals. These goals include:

- Ending poverty and hunger
- Achieving universal primary education
- Promoting gender equality and empowering women
- Reducing child mortality and improving maternal health
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Create a global partnership for development

These ambitious goals were developed in 1990 and intended to be met by 2015. However, the complex and wicked nature of these issues forced the UN to extend its timeline to 2030. To provide a sense of how much remains to be accomplished, consider the following statistics:

1. Over the last 25 years, the number of people living in extreme poverty has decreased by more than half, but there are still over 800 million people living in these conditions.
2. Enrollment in primary school has increased, but 9% of children worldwide do not have access to even the most basic education.
3. An estimated 20M adults and children are bought and sold worldwide into commercial sexual servitude, forced labor and bonded labor.
4. About 16,000 children under age 5 die each day.
5. About 5.2 million hectares of forest were lost in 2010.

It's easy to hear statistics like these and feel overwhelmed. But when viewed through the lens of a social entrepreneur, these big problems look like big opportunities to make a positive social impact. Also, keep

in mind that no single venture can completely solve a wicked problem or grand challenge and that impacting just a few people or even a single community can make a really big difference.

And finally, remember the words of Chinese philosopher Lao Tzu, “The journey of a thousand miles begins with one step.”

Identifying a problem you’re passionate about solving and beginning to learn as much as you can about it is a great first step.

