Risk, uncertainty, and stakeholder involvement

Objectives

- Assess the impact of risk perception and uncertainty on the entrepreneurial decision-making process
- Explore the extent to which the perception of risk and uncertainty leads to the involvement of stakeholders in entrepreneurial strategic decision-making

Entrepreneurial opportunities often defined by considerable risk and uncertainty

- Perceived uncertainty and perceived risk are hurdles to decision-making

Entrepreneurs differ from corporate managers based on decision-making factors

- Intuition
- Individualistic view
- High tolerance for ambiguity
- Confidence in skills, knowledge, and expertise

Understanding how entrepreneurs make informed decisions on risky opportunities

- Intuition
- Individualistic view
- High tolerance for ambiguity
- Confidence in skills, knowledge, and expertise

Perceived uncertainty

Perceived risk

Perceived vs. objective risks?

- Perceived = belief
- Objective = reality

- *Perceived* risk drives the decision-maker

Success of new ventures relies on the choices made by entrepreneurs

- Fast-changing competitive environments
- Demand for actively interpreting opportunities and threats
- Situations with incomplete information
  - Drive need to *perceive* rather than to *know for sure*
- Decisions perceived to be more *uncertain* increase perceived level of *risk* involved

Is launching a startup in the alternative energy market a good idea?

RUN LIKE THE WIND

28 times as much wind energy is produced in the U.S. today than in 1997.

TAKE A DEEP BREATH

If every household in the U.S. chose pollution-free electricity, we could **avoid 1.5 trillion lbs of carbon dioxide emissions** – that's like shutting down 170 coal-fired power plants.

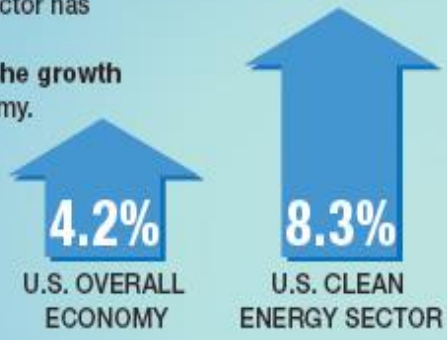
HELLO, SUNSHINE

800 billion kWh of solar energy could be produced if we filled every eligible home and business rooftop in the U.S. with solar panels

That's enough to provide **1/5 of U.S. annual electricity needs**!

MOVIN' ON UP

The U.S. clean energy sector has grown at a rate of 8.3% annually, nearly **double the growth** rate of the overall economy.



POWER PLAY

In 2011, job creation in clean energy outpaced fossil fuels by a margin of 3-to-1.

CARRY ON

If every American cut the number of plastic bags we use in half by using reusable bags, we could **avoid more than 1.6 trillion pounds of greenhouse gases** each year.

ELECTRIC VEHICLES ON THE ROAD

KICK THE CAN

In 15 years, 12 million people are projected to have traded in their conventional gas-powered cars for electric vehicles – that could avoid more than 6,800 million gallons of gasoline.

Focus: The long tail of rising energy consumption

1. Monitor & control high loads

2. DC Micronets provide efficient DC power lighting & electronics

3. Provide rapid & easy to install microgeneration & storage

Falling PV prices

Local Microgen

MOIXA TECHNOLOGY

Business model: Enable paths to action

Our Home Energy Systems monitor and detect usage, enable better control and pathways of action to grid shift DC loads to microgeneration, storage

Monitor & Identify → Facilitate Control → Power & Shift → Persistent Change

Renewables Integration

DC Micronets

MOIXA TECHNOLOGY

Control

Transparent technology:
- Interface is easy to use with intuitive controls
- House energy use is optimised based on automated analysis
- Monitor for your system
- Control appliances and heating over zigbee
- iPhone / PC / touch screen

Advice that is:

MEANINGFUL
Useful information with context
ACTIONABLE
Advice is a call to action to make a change
TARGETED
Customised to the behaviour of the household

LED lighting

DC powered up to 97% efficient, enabled by converting existing lighting circuit to DC

Retrofit to lighting circuit

- Swap existing light switches for our zigbee enabled intelligent switch units enabling change to DC LED lighting
- No need to change any wiring
- DC nodes to power devices, forming microenetwork in the home

Home Energy Hub

- Controls and optimises the network
- Provides power to DC devices
- Provides inputs for renewables
- Hosts interface and controls for the system
- Includes wifi / zigbee / ethernet

Smart meter

Hub communicates with smart meter (or clamp on sensor) over zigbee to get AC mains consumption data

Power from the hub

The hub allows DC devices to be plugged in directly - powering them efficiently from the DC microgrid

DC power for DC devices

- Hub powers DC devices @ efficiencies of 85-95% using DC power system
- Cables use patented smart tip system that codes for the voltage and current required by the specific device.

Power storage

- Life battery, 91% charge / discharge cycle efficiency after 7000 cycles (20 year life)
- Charge from PV or from off peak grid power

Integrated renewables

- Non traditional renewables installations, under windows, as shutters, solar shading etc
- Easy to fit (15 mins to install window PV panel)
- Small amounts of power efficiently used directly to power DC devices

Peak grid load shift

- DC devices represent 30% of domestic peak load.
- Peak load power is expensive, up to 5x base load
- Peak shift is paid at £50,000 per MW per year by NG
- IP connected system means that load can be aggregated

EcoKit 7000 Watt Solar Panel Kit, 40-175W Sharp modules, SB6000US SMA inverter & UniRac Mounting

Our Price:
$38,073.95

more info
add to cart

SunWize GTS 7000W
40 Sharp 175
1 SB6000US
Includes wiring & racking
Residential Grid Tie System

EcoKit 6300 Watt Solar Panel Kit, 35-175W Sharp modules, SB6000US SMA inverter & UniRac Mounting

Our Price:
$34,931.95

more info
add to cart

SunWize GTS 6300W
35 Sharp 175
1 SB6000US
Includes wiring & racking
Residential Grid Tie System

EcoKit 5600 Watt Solar Panel Kit, 32-175W Sharp modules, GT5.0 Xantrex inverter & UniRac Mounting

Our Price:
$31,042.95

more info
add to cart

SunWize GTS 5600W
32 Sharp 175
1 Xantrex GT 5.0
Includes wiring & racking
Residential Grid Tie System

EcoKit 5376 Watt Solar Panel Kit, 24-224W Sharp modules, GT5.0Xantrex inverter & UniRac Mounting

Our Price:
$29,471.95

more info
add to cart

SunWize GTS 5376W
24 Sharp 224
1 Xantrex GT 5.0
Includes wiring & racking
Residential Grid Tie System

EcoKit 4928 Watt Solar Panel Kit, 22-224W Sharp modules, GT5.0 Xantrex inverter & UniRac Mounting

Our Price:
$27,415.95

more info
add to cart

SunWize GTS 4928W
22 Sharp 224
1 Xantrex GT 5.0
Includes wiring & racking
Residential Grid Tie System

EcoKit 4725 Watt Solar Panel Kit, 27-175W Sharp modules, GT4.0 Xantrex inverter & UniRac Mounting

Our Price:
$26,329.95

more info
add to cart

SunWize GTS 4725W
27 Sharp 175
1 Xantrex GT 4.0
Includes wiring & racking
Residential Grid Tie System

Southwest WindPower Skystream 3.7 Generator Land 120-208-240V 60 Hz

Our Price: $6,212.00 more info

add to cart

Southwest Windpower
Sky Stream 3.7
Rotor Diameter: 12' (3.72 m)
120, 208, 240V
Land

Southwest WindPower Skystream 3.7 Generator Marine 120-208-240V 60 Hz

Our Price: $6,962.00 more info

add to cart

Southwest Windpower
Sky Stream 3.7
Rotor Diameter: 12' (3.72 m)
120, 208, 240V
Marine

Kestrel e300i 1000 Watt Wind Turbine 12-volt

Our Price: $3,849.95 more info

add to cart

Kestrel e300i
1000 Watt
12-volt
Wind Turbine

Kestrel e150 600 Watt Wind Turbine 12-volt

Our Price: $1,595.95 more info

add to cart

Kestrel e150
600 Watt
12-volt
Wind Turbine

Experienced entrepreneurs mitigate risk in decision-making

- *Intuition* improved through past experiences
- *Individualistic* view complemented by relationships and team orientation
- *High tolerance for ambiguity* based on comfort with making difficult choices with in complement information in the past
- *Confidence* in skills, knowledge, and expertise enhanced based on past success

Role of stakeholders in decision-making

- *Stakeholders*: individuals or groups who can affect or are affected by the achievement of the organizational objectives (e.g. customers, suppliers, investors, etc.)
- Involvement of stakeholders can reduce uncertainty and improve decision-making
  - Why? Understand their experience, desires, constraints, etc.
- Higher uncertainty increased value of involving stakeholders in decision-making

Which stakeholders should entrepreneurs focus on?

- With limited resources, focus on deeply understanding a few stakeholders rather then getting a limited understanding of many
- Select stakeholders with:
  - Representative
  - Power
  - Legitimacy
  - Urgency

Methods to hear the voice of stakeholders

- Interviews
  - Experts in the field, to include faculty
  - Prospective customers
  - Prospective investors
- Focus groups
- Surveys
  - Consider Twitter and Facebook integration

Be sure to:

- Assess the impact of *risk perception* and *uncertainty* on the entrepreneurial decision-making process
  - Each factor play a central role in entrepreneurial decision-making
- Perception of risk and uncertainty benefit from the involvement of stakeholders in entrepreneurial strategic decision-making
  - Focus on a few, meaningful stakeholders
- Traits helpful for managing risk perception and uncertainty
  - Intuition
  - Individualistic
  - High tolerance for ambiguity
  - Confidence

Summary

By understanding the components of the *entrepreneurial behavior*, you can assess and enhance your own.

- How high are the risks?
- What are the rewards?
- What are the consequences?
- Were all elements of the decision considered?