

Building an Electricity Eco- System

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Short Version

Why?

- Parallels to Electricity 1.0
- Unprecedented leverage
- Decisions for decades

Why Now?

- Technology is ready
- Stakeholders are ready
- It won't last

How? Tactics and tricks

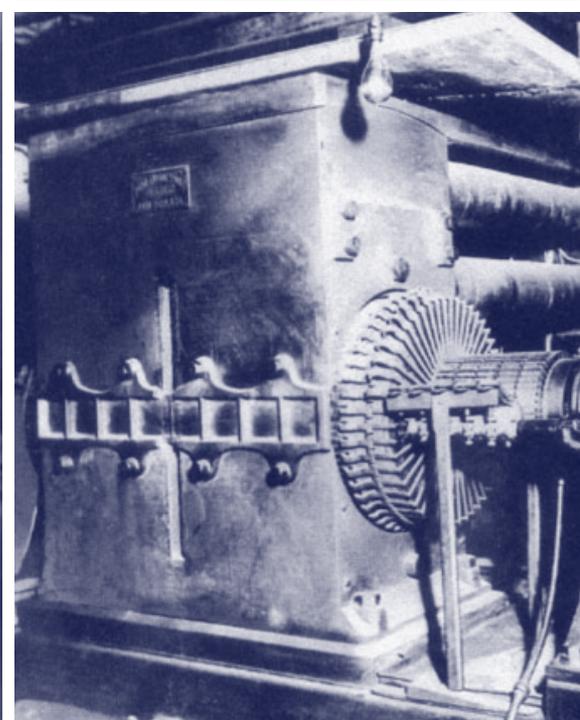
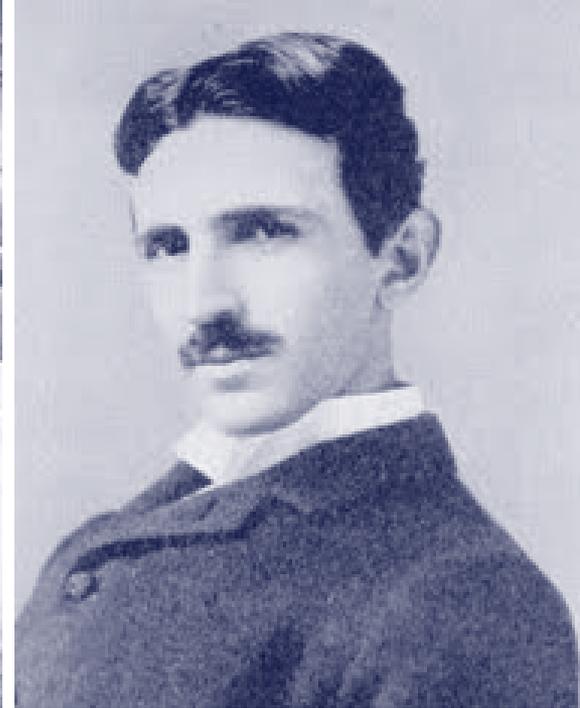
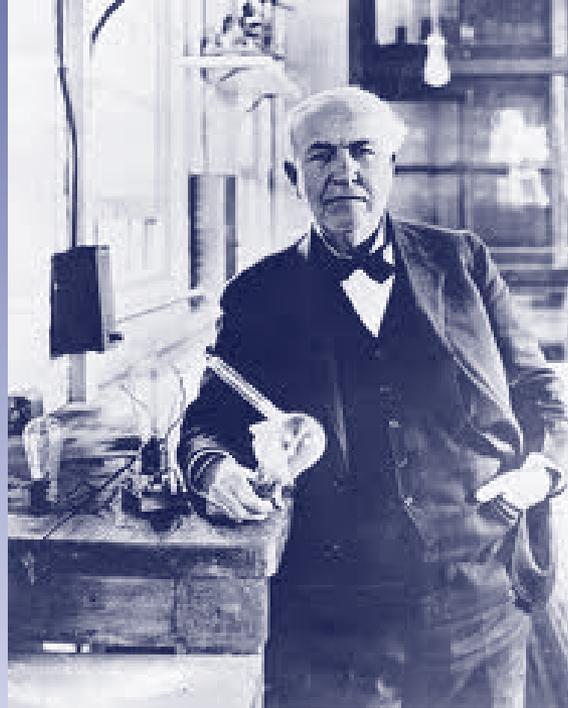
- 8 techniques to consider





Imagine... life **before** electricity

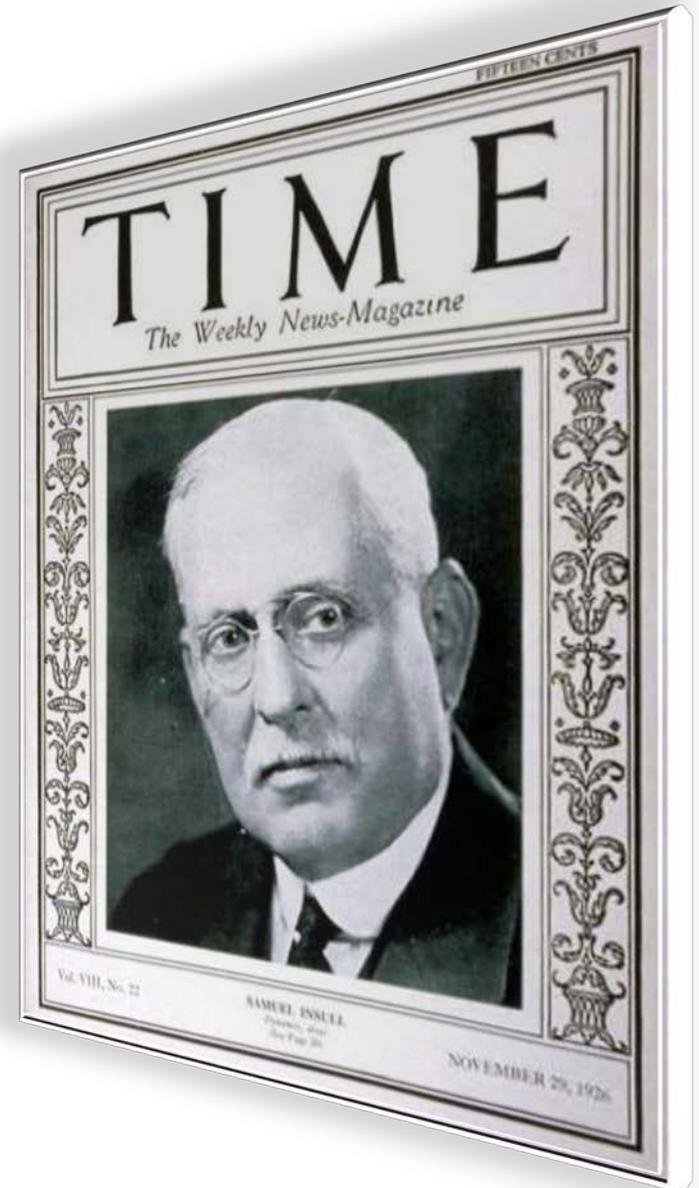
Consider the
crucial
**technology
decisions**
made about
Electricity **1.0**



Consider the important **business & policy decisions**

Insull innovations

- Regulation of natural monopolies
- Centralized plants
- Economies of scale
- Time of use pricing



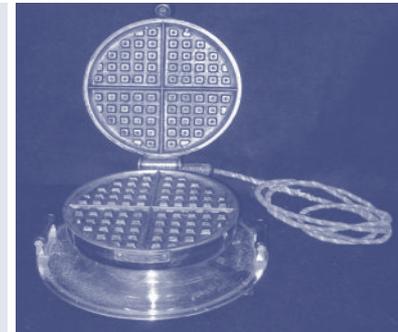
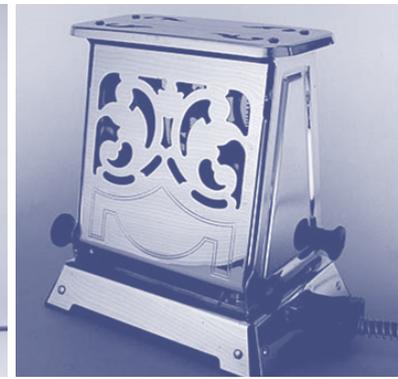
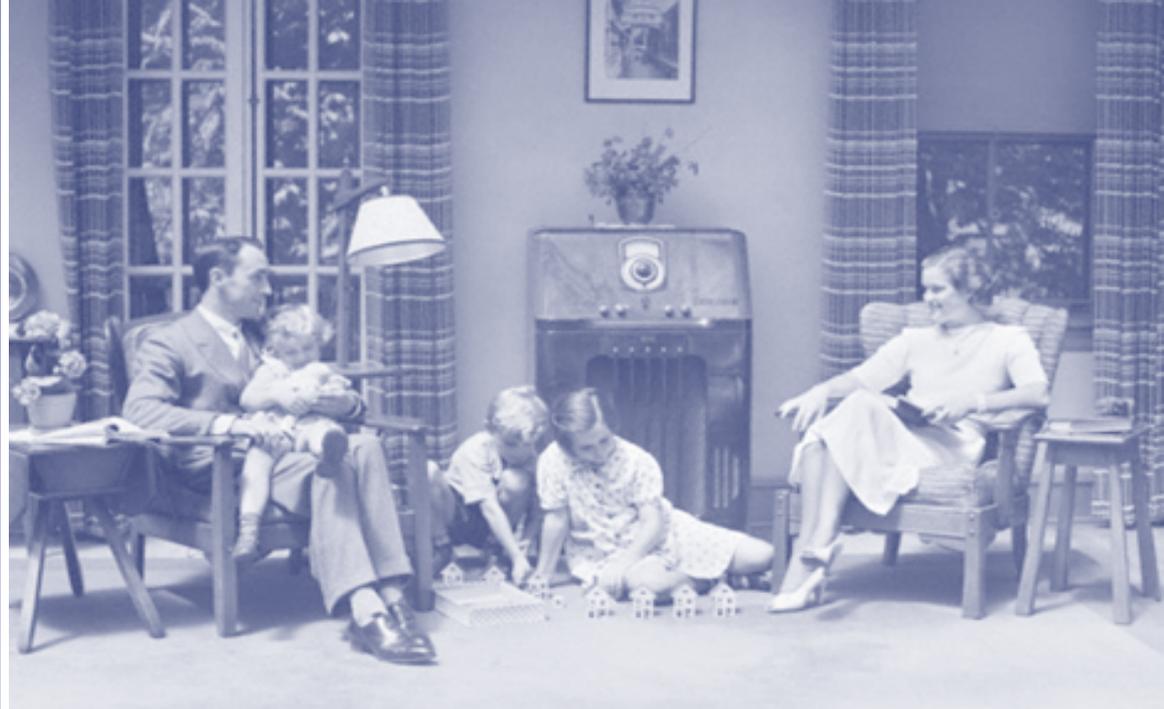
**Better energy
technology**

+

**Better energy
policy**

=

**Better
standard
of living**



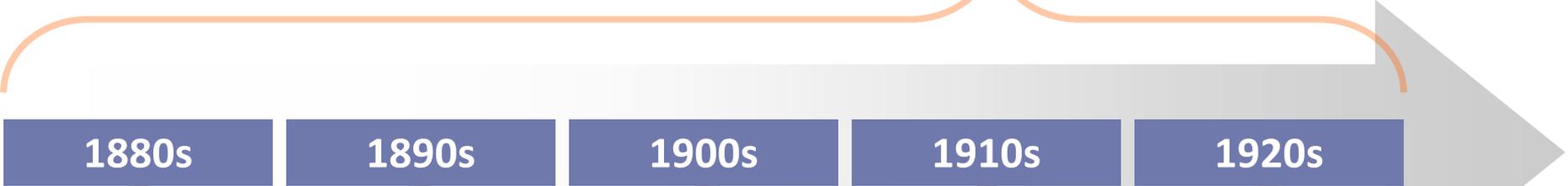
We are underway on a transformation every bit as big, but...

**... it will be more
difficult and
more rapid**

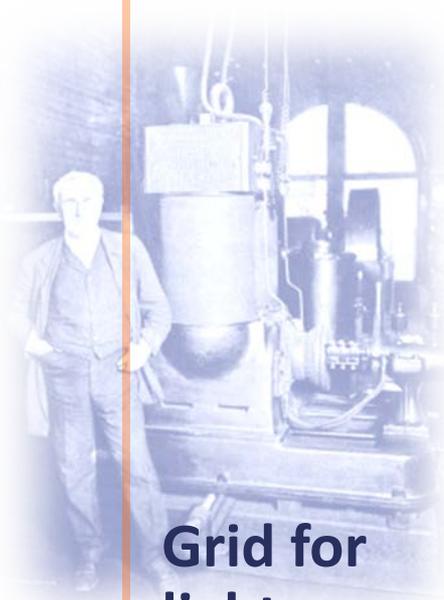


Electricity 1.0

40
years



1880s



Grid for light

1890s



AC and useful motors

1900s



Household appliances

1910s



Centralized plants

1920s

Regulated model

We are underway on a transformation every bit as big, but...



... we have **10** years

- China won't wait
- The environment won't wait
- Google won't wait

And our work is
much harder

- Technical complexity
- Size and scale
- Entrenched interests
- Balkanized system

Important futures vocabulary

Vuja De

- Eerie feeling just seen something you never want to see again

Prestalgia

- Wistful longing for something that hasn't happened yet

Anticipointment

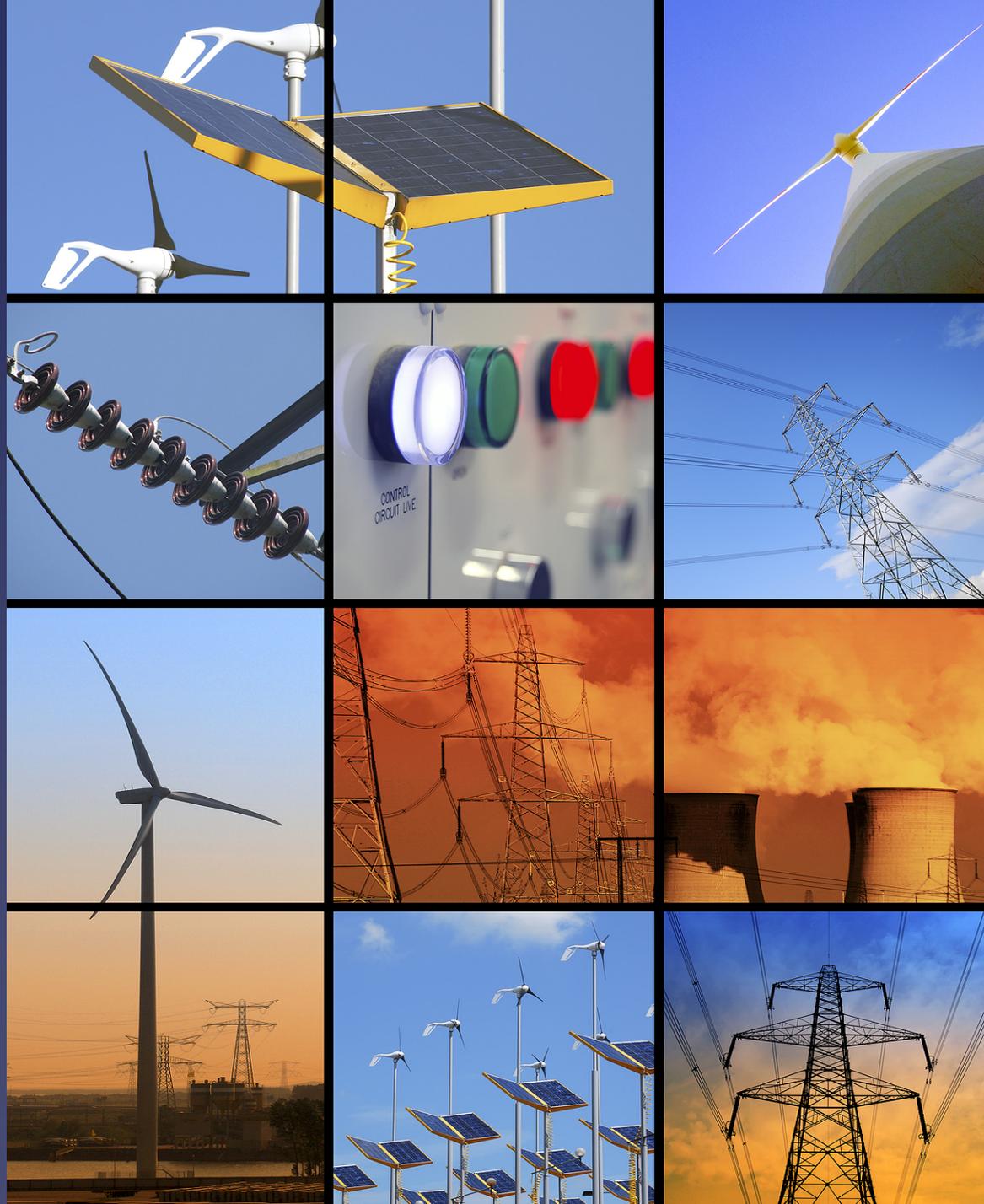
- Doesn't live up to the hype

Dopeler effect

- Tendency of stupid ideas to seem smarter when they come at you rapidly

We're making
those
decisions
again

Reinventing
Electricity



We are
reinventing
electricity...

How we
make it



How we
use it



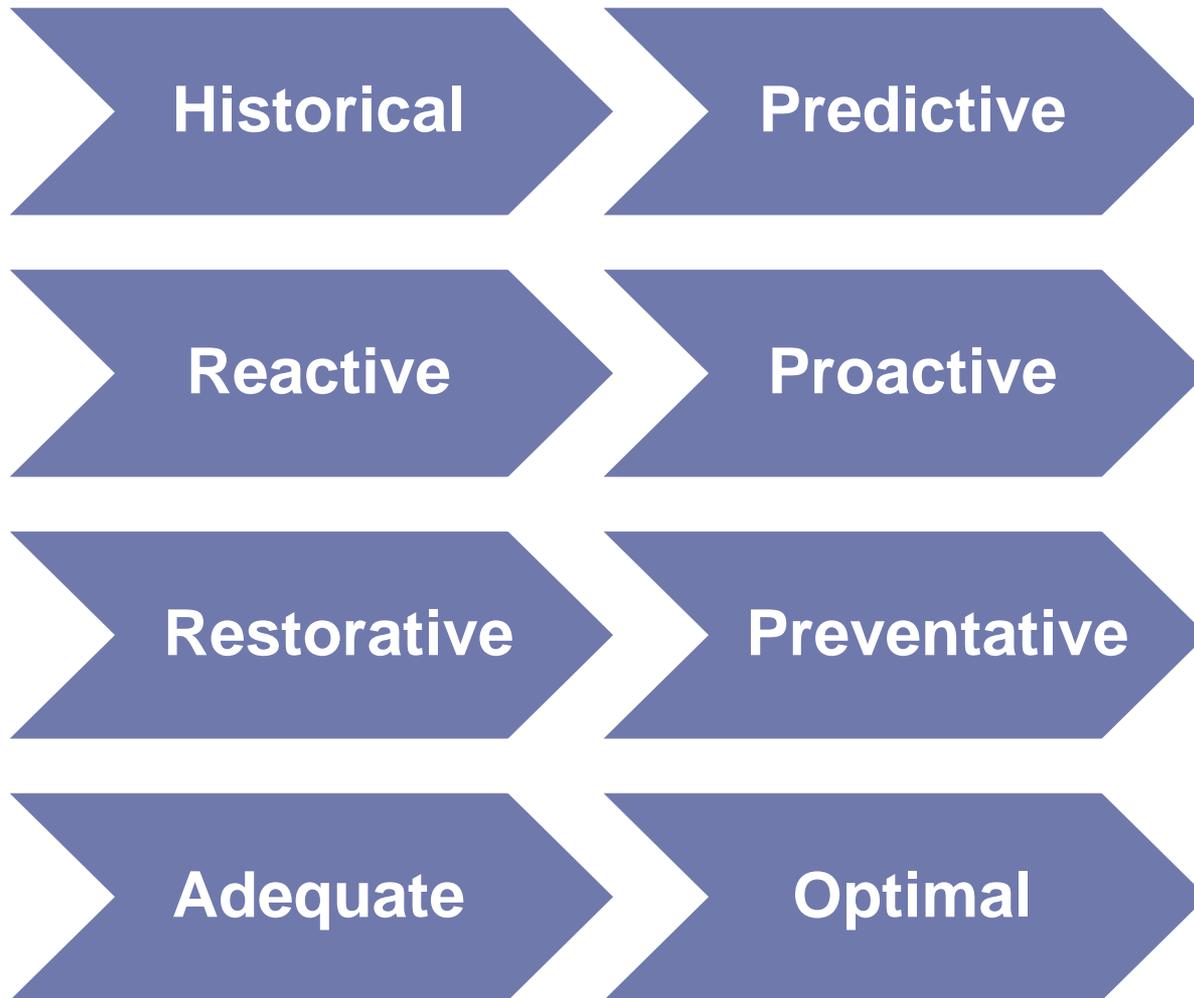
What we
use it for



And how we
deliver it



We're moving to prediction and optimization



**The “traditional”
business model will
not sustain
a modernized electric
power industry**



Spend more:

- Integrate renewables
- Enable efficiency
- Electrify transportation
- Decarbonize generation
- Modernize the grid
- Make demand a full partner
- Give customers choice
- Provide universal service
- Keep rates low

To make less:

- By selling fewer electrons

Walking into a **Rate Hearing**



It's time to have an **active voice**...
not just in technology
but in **policy too**



Dynamic pricing?

Fixed-cost recovery?

Integrated system planning?

Decoupling?

Mergers?

Non-regulated businesses?

Data sharing?

Important **policymaker** definitions

Committee

1. n. 12 people doing the work of one
2. n. A life form with six or more legs and no brain
3. n. A group that keeps minutes but wastes hours

Bozone Layer

Substance surrounding people preventing bright ideas from penetrating

Obliviots

Oblivious to own idiocy

Tedio-crity

Ability to be tedious and mediocre at the same time

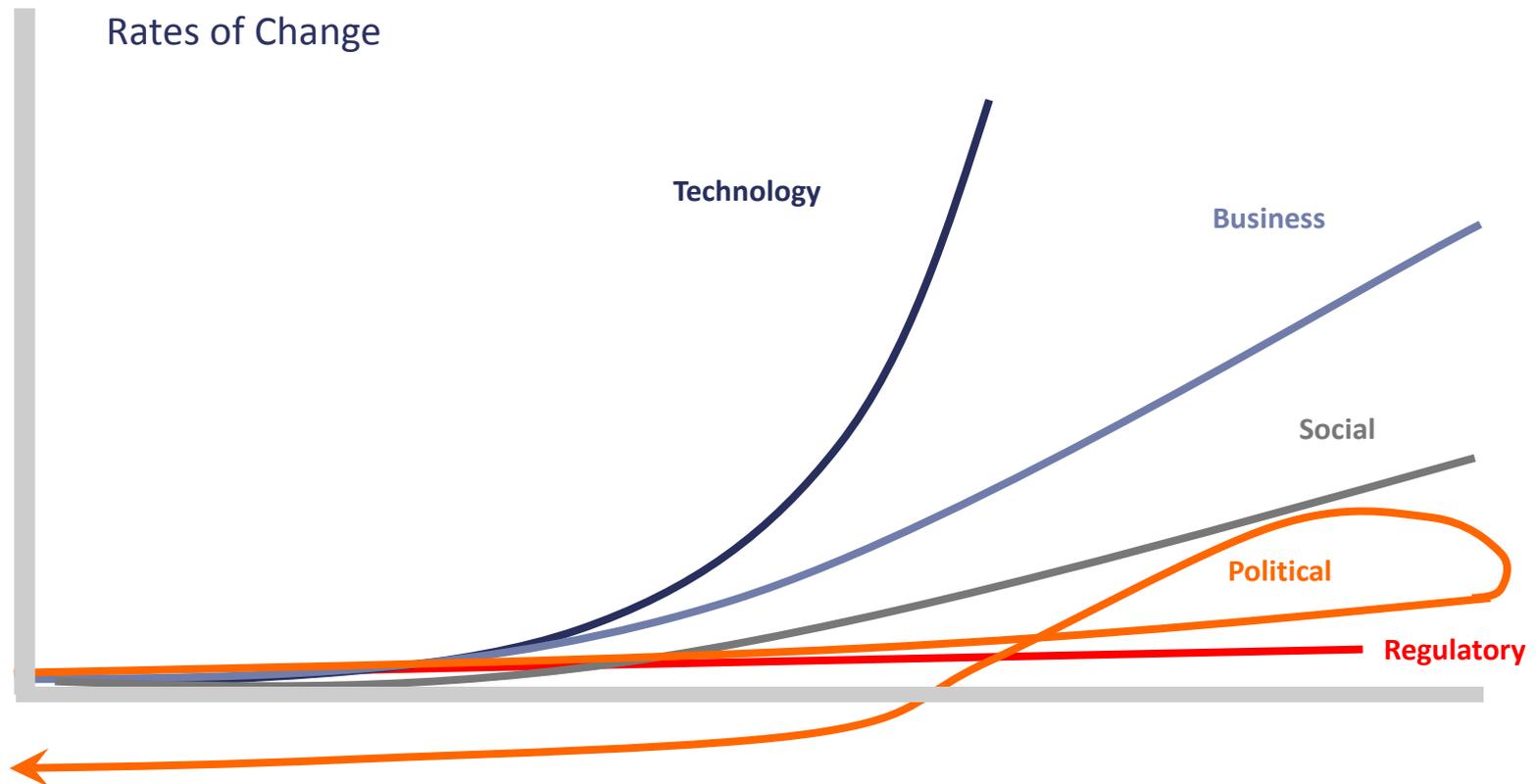


Policymaking **challenges**

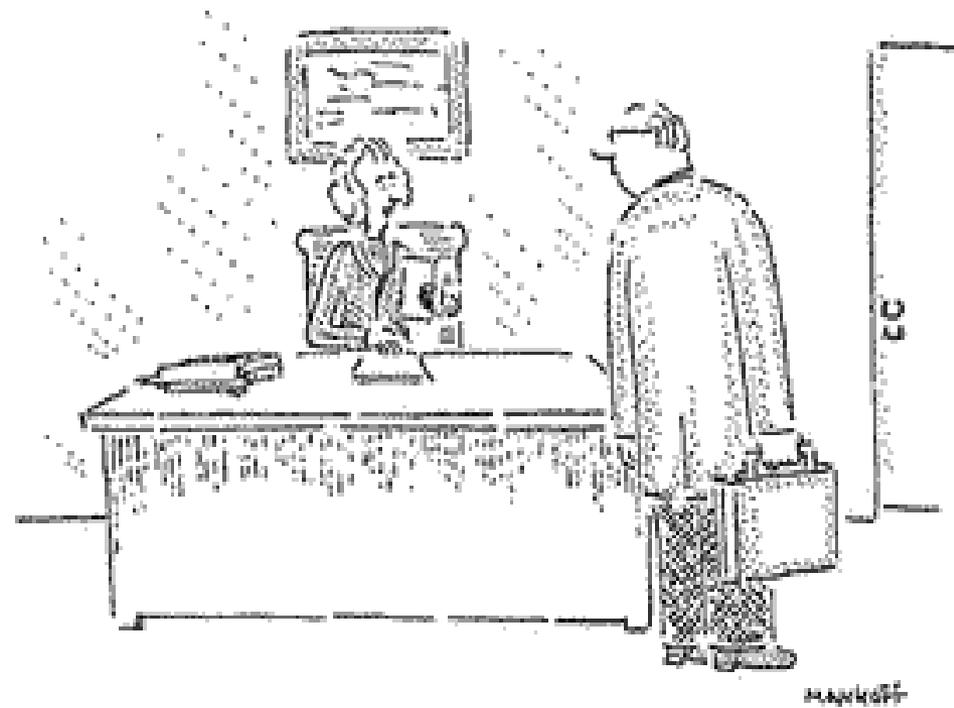
Balkanization and the warlord mentality

Utility fear of speaking out

The rate of change



When the tipping
point arrives,
the pace
accelerates



*“Sir, the following paradigm shifts
occurred while you were out.”*

The pace **accelerates**



Telecom



Television



Banking



Newspaper



Music



Bookselling



Short Version

Time of transition

- Parallels to Electricity 1.0
- Unprecedented leverage
- Decisions for decades

Now is the time to make a difference

- Technology is ready
- Stakeholders are ready
- It won't last

Dialog

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Customer as **Hero**

The Jack **Welch** strategy

The **Big Ask**

The
Big Answer
to help them AND
to help them be
HEROES
to their own customers

Walking

not talking

(if you don't need the credit)

Convening

Power

The Power of the Center

Eye **Eye**, Sir

Smart Grid = Better **environment**



Where the puck **will** be

CoLo SoMoLo

**COnnected
LOcated (GIS)**

**SOcial
MObile
LOcalized**

Dialog

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Important **change** vocabulary

Blamestorming

Brainstorming who to blame if things go wrong

Assmosis

Gradually migrating to success by kissing up to the boss

Seagull managers

Fly in, crap on everything, fly away

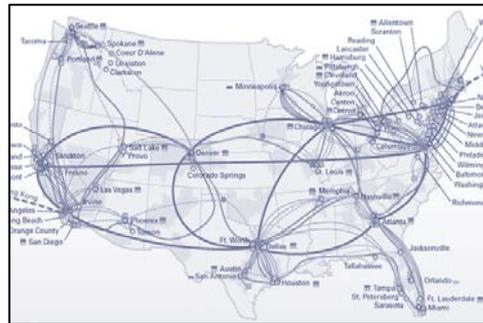


Electricity 2.0 is a legacy of prosperity

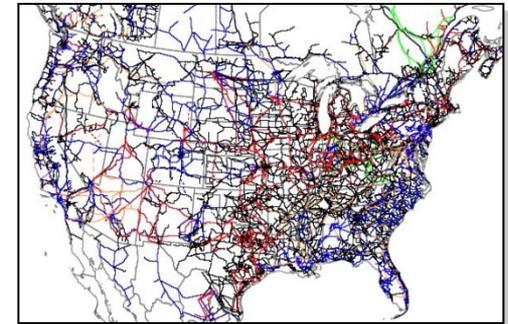
Transcontinental Railroad



Phone Network



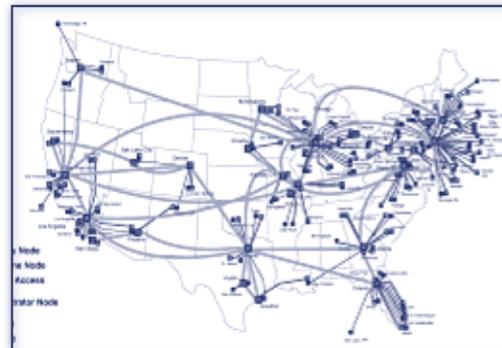
Electric Power Grid



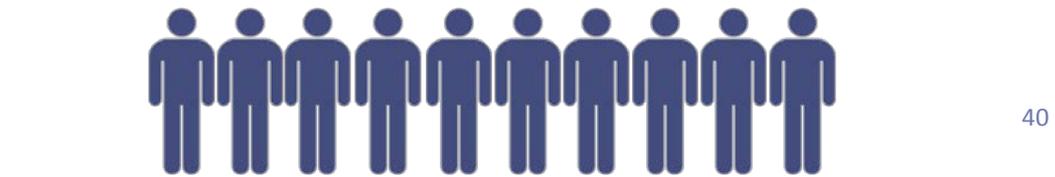
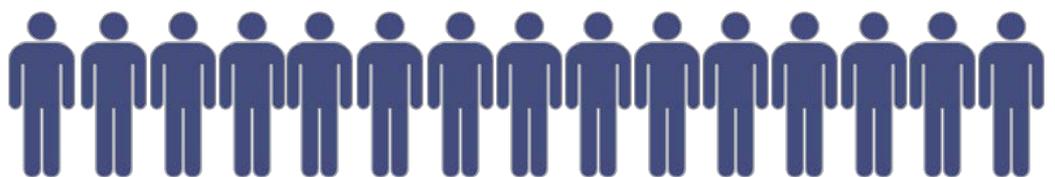
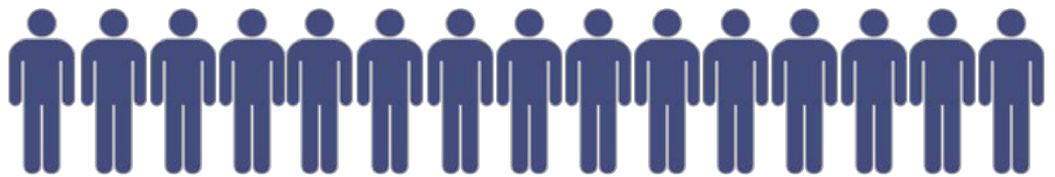
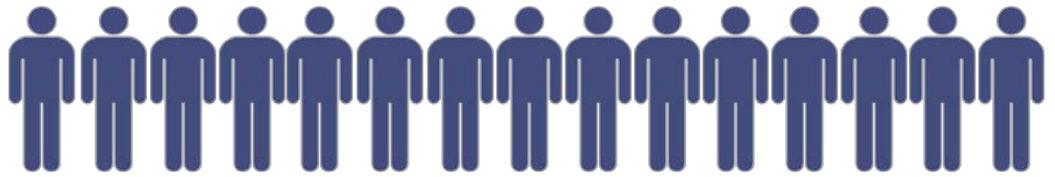
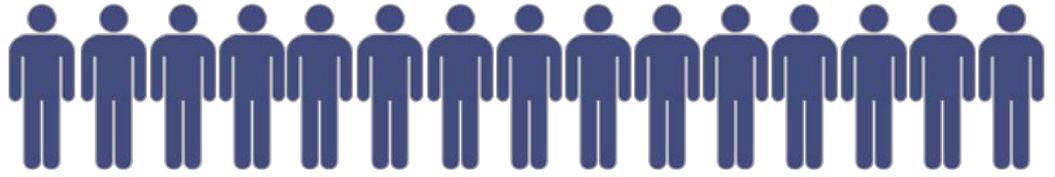
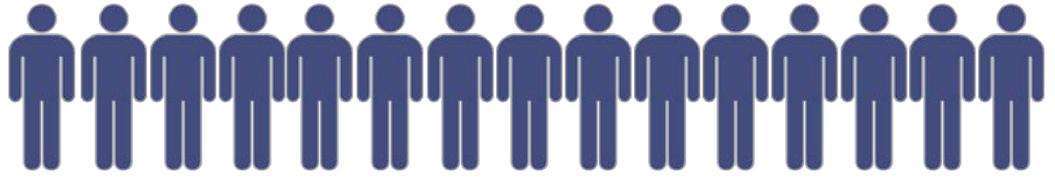
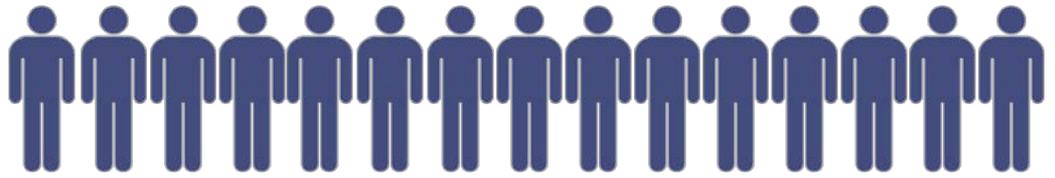
Interstate Highway System



Internet Backbone



If the world
was a village



If the world was

100

people

20

would be
without
electricity

therefore
refrigeration,
water pumps,
safe lighting,
Internet

