Visualizing Complexity: 

Data is Useless, 
Wisdom is Priceless

Brian Barnes 
Director, Strategic Markets
Brian Barnes, M. Arch, UCLA
dad
designer
dreamer
doer

RS21

Dekker/Perich/Sabatini Architects
Gensler Architects

The NOW Institute

University of New Mexico:
School of Architecture + Planning

Director, Strategic Markets

Architect / Designer

Research Analyst / Contributing Author [Haiti NOW, 2014]

Instructor
The World’s Best Green Airport

resembling the nature of Korea
300,000 people

2010 → 2012

$ 9,490,000,000

?
“For every complex problem there is an answer that is clear, simple, and wrong.”

- H. L. Mencken
The food problem is an energy [electricity] problem.
87% lack access to electricity.
Fuel-wood and charcoal account for 75% of energy consumption.

90% of Haitians depend on fuel-wood and charcoal for cooking.
97% of forests harvested or destroyed.
Arable soil lost.
Why do we work on complex problems?
Disaster Resilience
“For every complex problem there is an answer that is clear, simple, and wrong.”

- H. L. Mencken
mechanics of visualization
We remember:

- 10% of what we HEAR
- 30% of what we READ
- 80% of what we SEE, DO, AND EXPERIENCE

- Jerome Bruner (father of cognitive psychology, NYU)
Simple

Complicated

Complex

Chaos

Tightly constrained
No degrees of freedom

Governing constraints
Tightly coupled

Enabling constraints
Loosely coupled

Lacking constraint
De-coupled
All models are wrong, some are useful.

- George Box, Statistician
All models are wrong, some are useful.
- George Box, Statistician
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CHOLERA PREVENTIVE COSTUME.

He who would defend himself from the Contagious Disease must be dressed in the following Manner:

The band to be extremely covered with India rubber, in which open is large. High Boots must cover the whole up to knees long. Put a Copper Plate on the foot of the Man, and on the breast of an iron case. Around the neck place a double band. Allow with Pepper & Scurvy Powder. Pull the hose with rubber, incorporated with camphor, in broiled skin. Put a large tube, of published vinegar, and admit a stream of air into its sides. The broad, which another part of the tube, mixed with camphor. To this broad wind can and cork, put in a piece of wood, a tube of the same stuff, with the face to be covered with a rubber mask. In the right arm coat pocket a bundle of dressed tea, and built a bundle of dressed tea, in the left pocket a roll of preserved beef, in the left a roll of preserved beef, in the right pocket a roll of preserved beef. To the broad, ifenus a piece of camphor, and put in a piece of camphor. To the broad, ifenus a piece of camphor, and put in a piece of camphor. To the broad, ifenus a piece of camphor, and put in a piece of camphor.

John Snow
London, 1854
- Robert Hooke, Micrographia, 1665

The importance of seeing.
5 principles
To maximize value and utility, a great visualization must provide:

light
To maximize value and utility, a great visualization must provide:

light
context
To maximize value and utility, a great visualization must provide:

light
context
meaning
To maximize value and utility, a great visualization must provide:

light
context
meaning
truth
To maximize value and utility, a great visualization must provide:

light
context
meaning
truth

wisdom
action
outcomes
results
To maximize value and utility, a great visualization must provide:

- Context
- Light
- Truth
- Meaning
- Wisdom
- Action
- Outcomes
- Results

BEAUTY
4

musts
intuitive
intuitive

insightful
intuitive
insightful
inspiring
intuitive
insightful
inspiring
intellectually honest
Visualizing Complexity:

Data is Useless,
Wisdom is Priceless

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