

NI+

**Shaping national
intelligence now
to solve
complex
problems
in the future**

sustainablefuture.info

Why NASA?

“We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.” - JFK

Futures Studies – The Theory

Three Sights - Hindsight, Insight and Foresight

Three P' s

Probable future - Forecasting and sometimes prediction (Status Quo)

Possible futures - Scenarios, risks (Explorative)

Preferred futures - Strategies for change, propelled by innovation & leadership (Visionary)

Four Steps

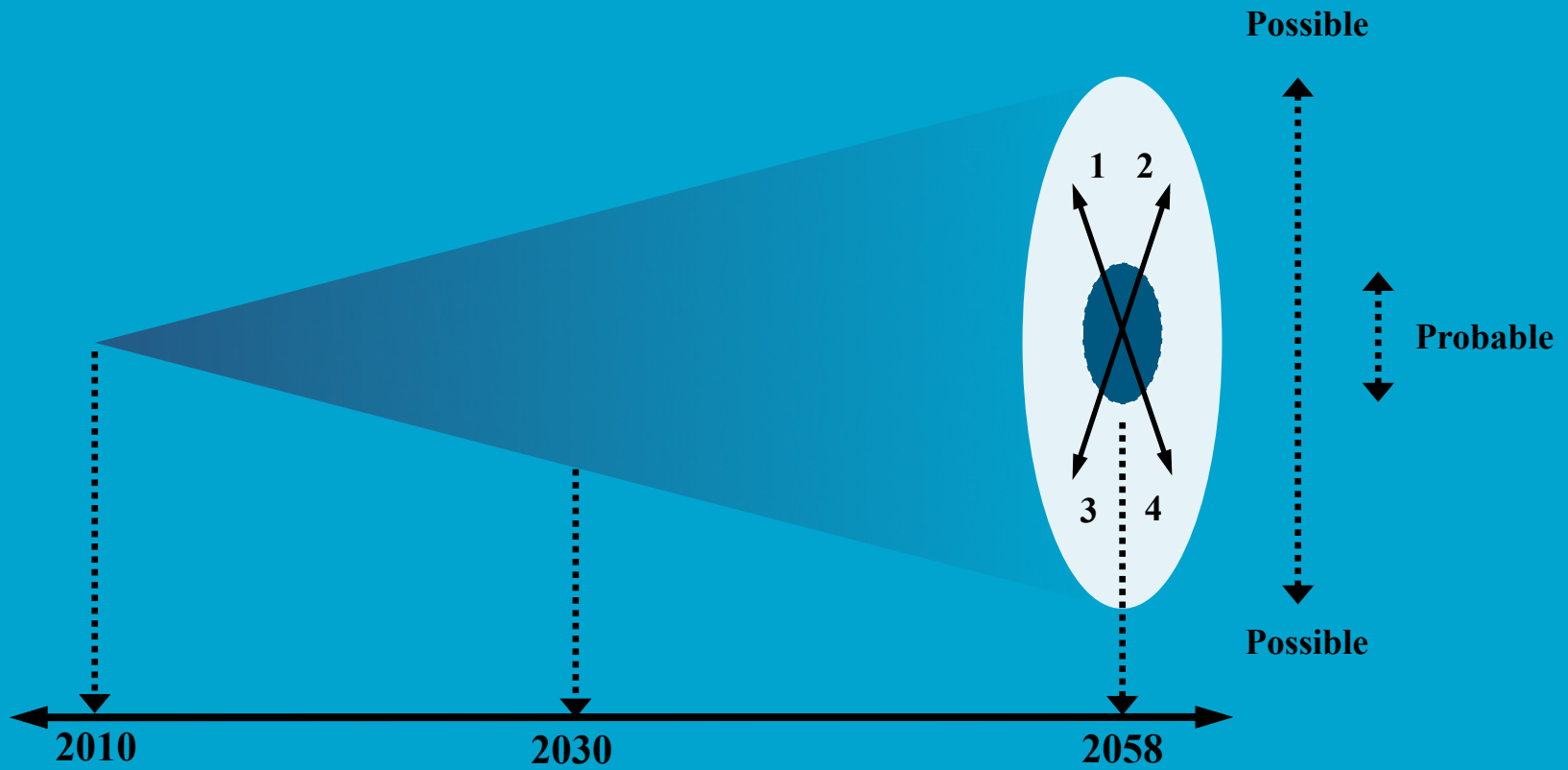
Define - parameters, trends, drivers, assumptions

Explore - uncertainties and rank

Build - scenario worlds, write stories, test

Use - consider implications, review, communicate

Scenarios



$$97 - 90 = 7$$

$$7 - 3 = 4$$

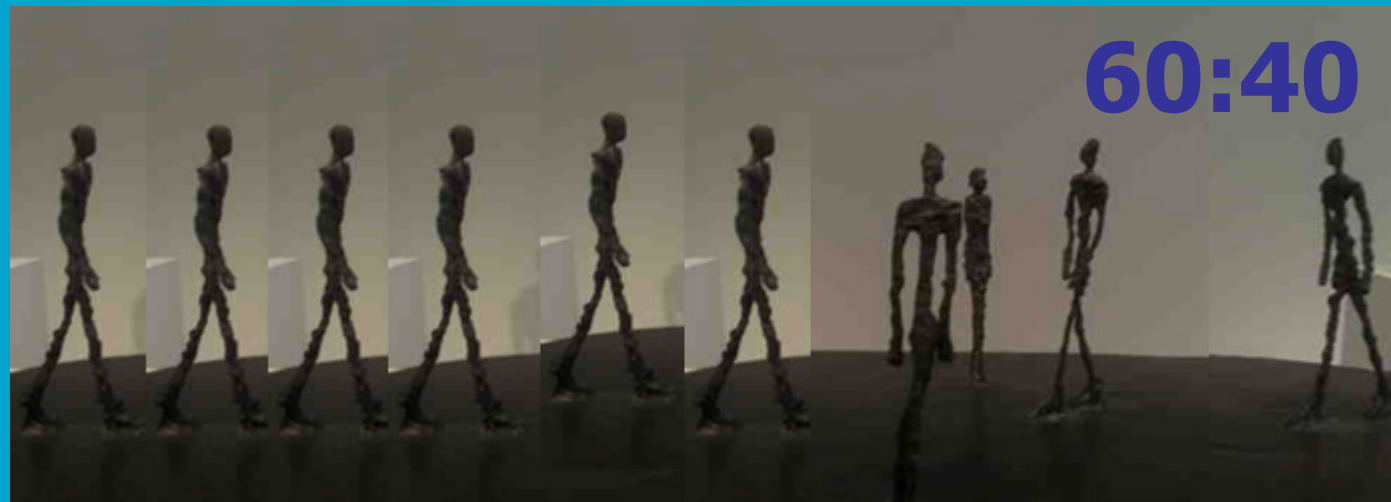
$$4 - 2 = 2$$

Insight and Foresight

In 2008, 3 billion made \$2 or less per day.



Fifty years later, the developed countries & China grow old while Africa & India remain young.



Harvard Business School, Boston



An exact replica of this room exists in Shanghai, even to the same timber!

Given the

- **increase in population**
- **climate change &**
- **the existence of wildcards**

Wild Card 1

Technology

- **Info**
- **Nano**
- **Bio**

Wild Card 2

Terrorism & War

- **Crime**
- **War**
- **Nuclear War**

Wild Card 3



Health & Safety

- **Antibiotic R.**
- **Pandemic**
- **Food**
- **Water**



Our generation can expect a life expectancy of 92 – 100 years of age.

Our children, if we fail to manage their weight gain, will have 80 year old bodies in 50 year old skin.

Crime is now global

- **\$1 trillion pa Illicit Trade**
- **150 unauthorised use of nuclear or radioactive materials in the last 4 years**
- **20,000 active nuclear weapons**



The first **computer chip** was invented in late 1950



Just over 50 years ago

The **first text message** was sent in 1991

Just under 20 years ago

The phone that now fits in your pocket, will fit inside the **first blood cell**

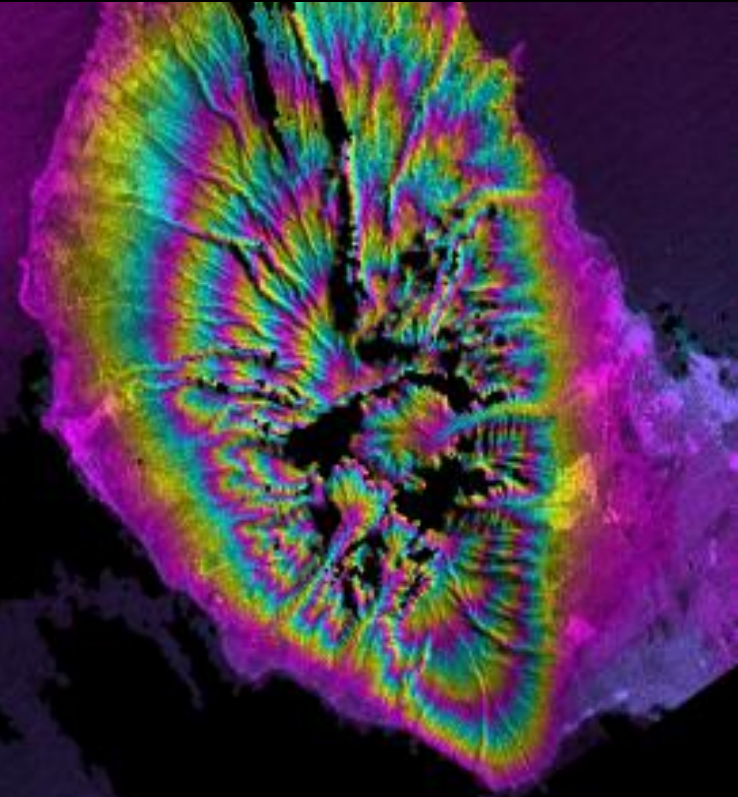
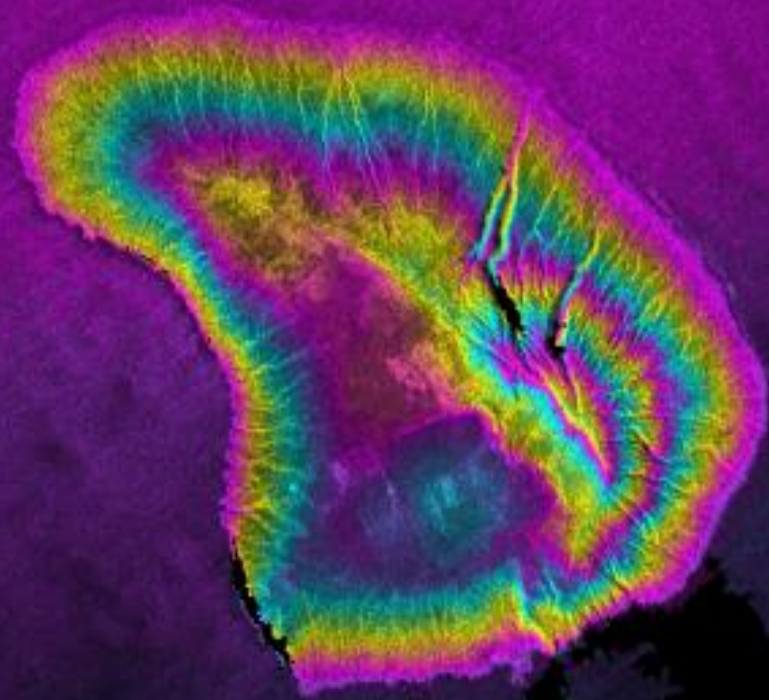
In about 25 years time.



Man & Machine?

Man is expected by some to create a machine with the equivalent of a human brain by 2029...

NASA satellite images



Adapting to a changing environment



Image from the Rising Currents exhibition at the Museum of Modern Art, New York, October 2010

Exponential Times

Suppose a water lily is growing on a pond in your backyard. The lily plant doubles in size each day.

If the lily were allowed to grow unchecked, it would completely cover the pond in 30 days, choking out all other forms of life in the water.

When it covers half the pond, how many days do you have left?

100 Nobel laureates warn our security hangs on environmental and social reform, 2001



How do we develop a new way of thinking?

1. Why is education a priority?
2. What should be the focus for education?
3. Who will solve the global problems?
4. When will solutions be found?
5. Where should changes occur within education?
6. How can we redesign education to face these challenges?



History does not repeat, but it does rhyme

John Dewey (1859-1952)

- The School and Society – “without some goals and some effort to reach it, no man can live”
Focus on whole person.

Ellwood Cubberley (1868-1941)

- Schools are factories – trained a generation of administrators in what was called the “science” of school management. Paternal.
Focus on efficiency.

Lewis Terman (1877-1956)

- IQ test – at age of 5, Three R’s – reading, writing and arithmetic.
Role of Teacher to memorize, manners and recite.
Focus on measuring and testing.

Assumption 1: Global Problems = Global Solutions

Assumption 2: Requires some form of global intelligence

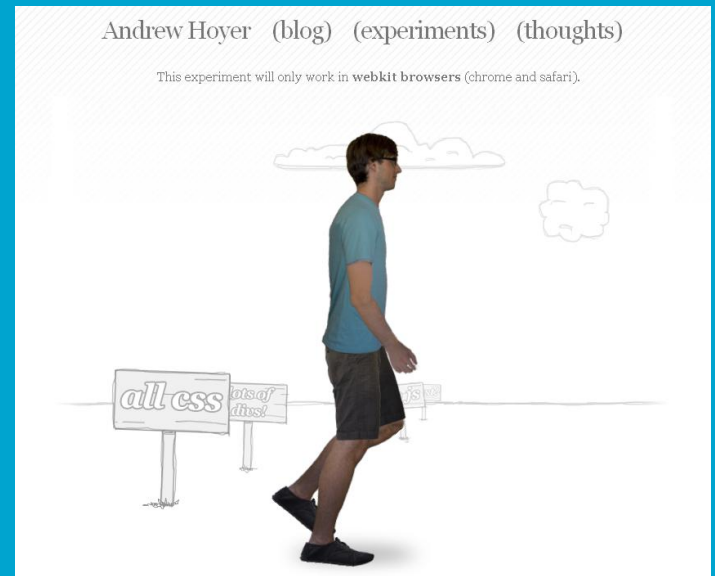
Assumption 3: $GI = NI \times 195$ countries

Assumption 4: $NI = (EI \times IQ \times EQ \times CI \times TI \times FI)^{\text{population}}$

Then if our aim is to increase NZ's NI, then

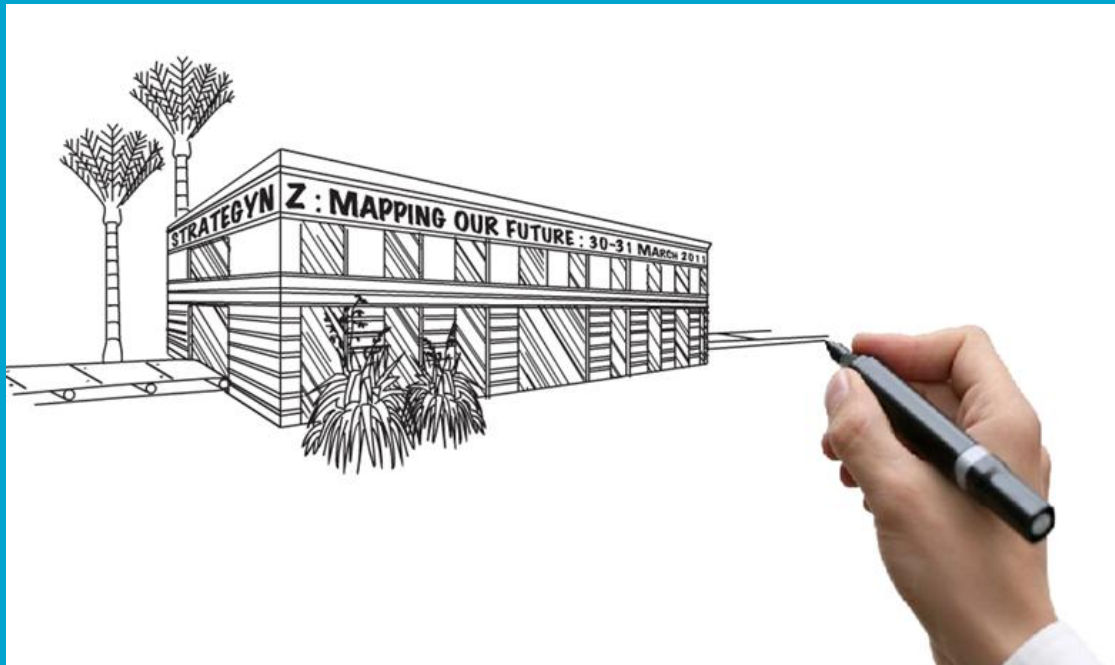
$$NI^+ = (EI \times IQ \times EQ \times CI \times TI \times FI)^{4,386,609}$$

Who is Andrew Hoyer?



- 1) Attention to detail. This to me is one of the most important skills that anyone can acquire. Being able to finish a task is important, but being able to finish a task well is so much more important especially when having to work with other people.
- 2) Patience. Having the drive to tackle problems over and over again is essential in being able to complete real world problems. Without patience I would never get anything done.
- 3) Courage to learn. Being able to jump into the unknown and start learning is incredibly hard for some people and it definitely takes some time to get used to it. But once you get comfortable with the unknown your potential for learning and working is limitless.

'Rethinking the Old' – Lara



Xero was co-founded in July
2006 by Hamish Edwards

Don't be afraid to fail

Think really big

Build a network

Always present well

**Be honorable and have personal
integrity**

**Make decisions and be
responsible for the results**

Be free with your time

See the world

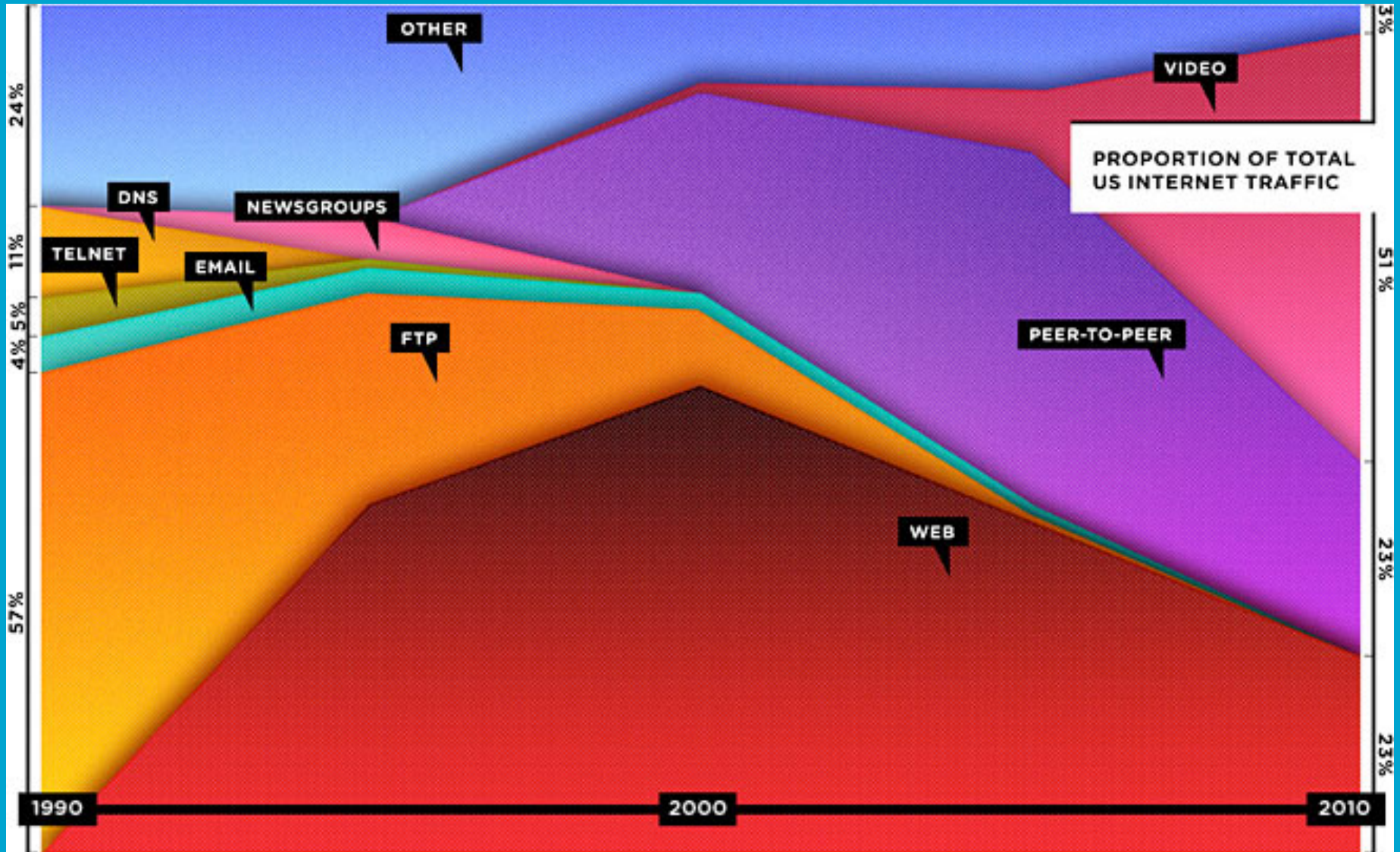
**Remember where you come
from**

**Get married and have kids...(but
not for a while yet)**



Technology wants to be invented and we are almost powerless to stop it. We are hard-wired to create the future, be it good or bad. Invention is its own master - Chris Anderson, WIRED magazine

The Web is Dead



WIRED: Sources: Cisco estimates based on CAIDA publications, Andrew Odlyzko

Skills for the Future

Non-routine thinking

Complex Communication

1. Critical thinking

2. Problem solving

3. Collaborative

4. Communicate

5. Innovate

6. Be globally aware

7. Be self directed

8. Technology literate -
Ken Kay

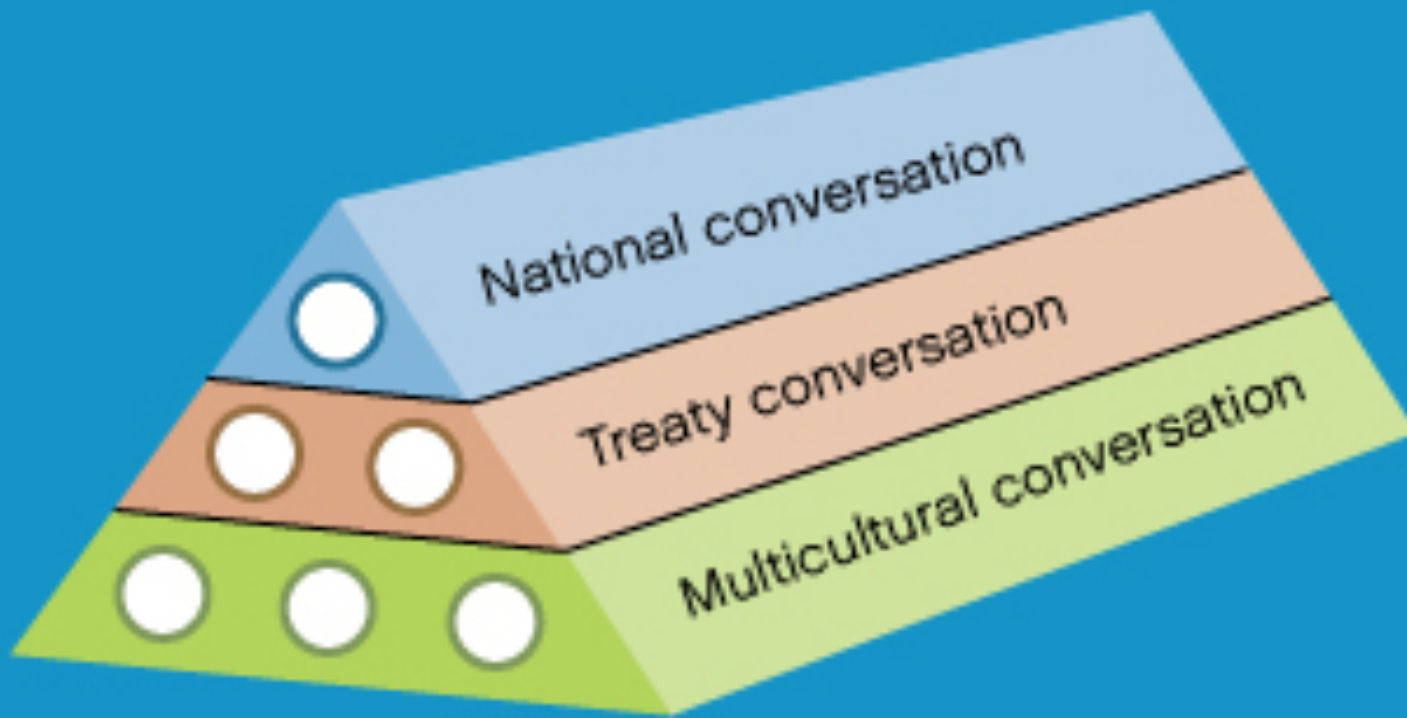
1. Witnessing: Opening our
eyes

2. Learning: Opening our
minds

3. Connecting: Creating
relationships

4. Geo-partnering: Working
together - Gerzon

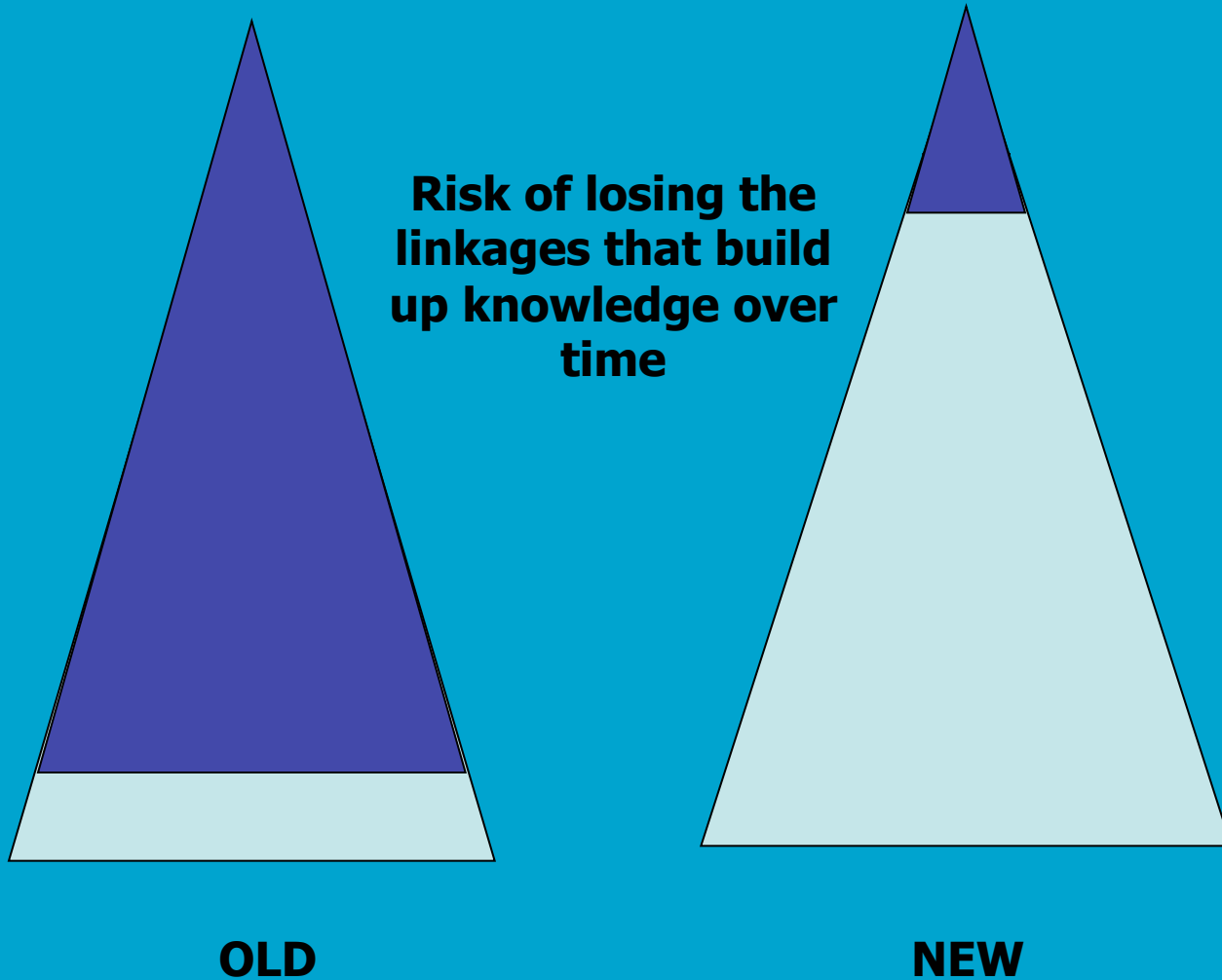
Emerging forms of democracy



An aerial, black and white photograph of a busy city square. The square is paved with large, light-colored rectangular tiles. A large crowd of people is scattered across the square, some walking, some standing, and some interacting. In the upper right corner, there is a set of stairs with a metal railing. In the bottom right corner, a sign is visible with the text "LONDON SEARCH" and a logo. The overall scene is one of a bustling, public space.

**By
knowing
who or
what
you
belong
to**

Losing transparency



Thank you



**Their
future
or our past**

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