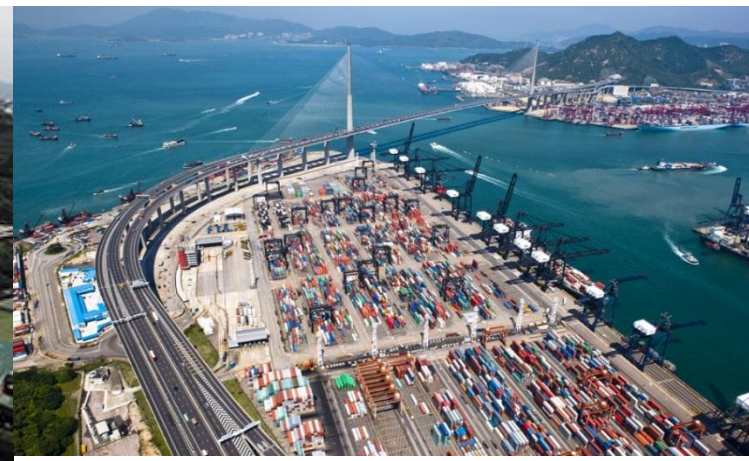
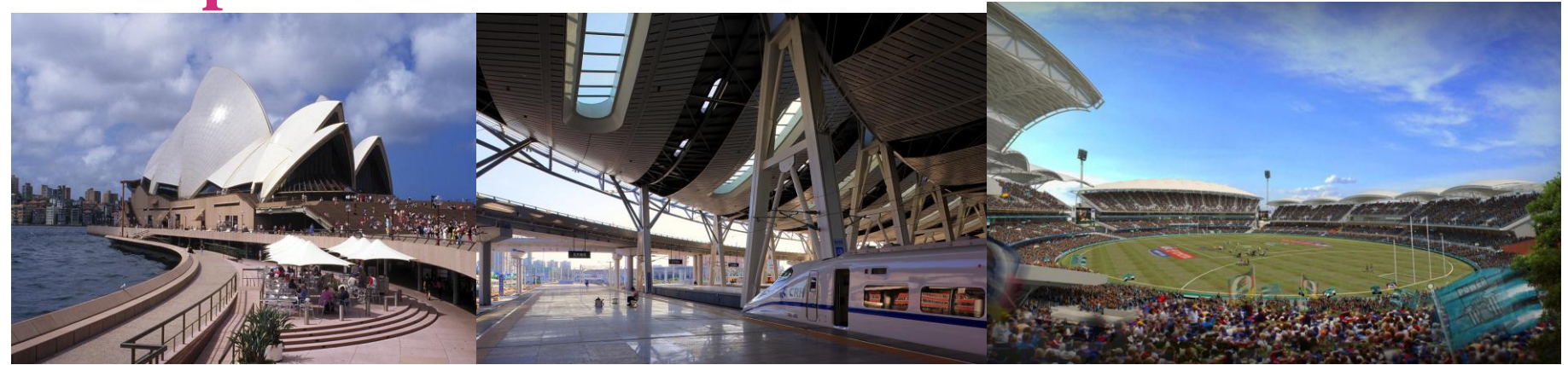


High Hopes

Pink Floyd, Knowledge Management & Driving Innovation in a complex organisation

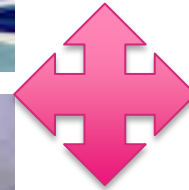


Arup



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The major problem for Innovative People in organisations



The average work week

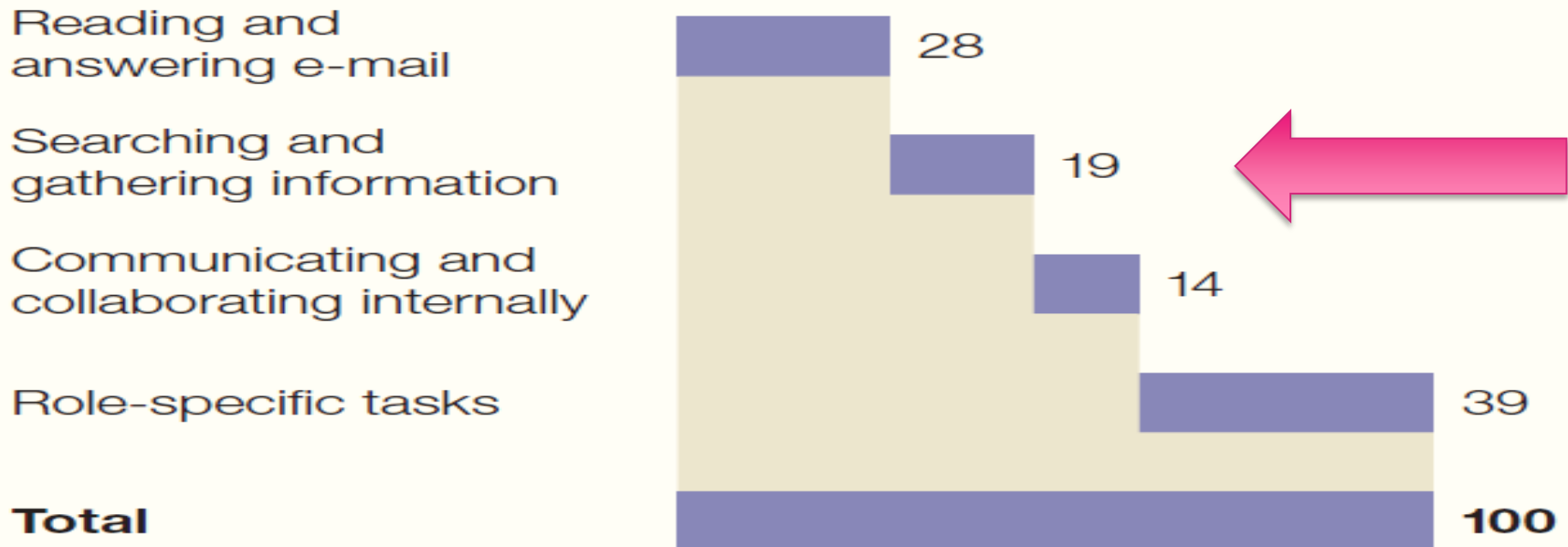
Steps taken forwards but sleepwalking back again

Dragged by the force of some inner tide



% of average workweek

Interaction workers' tasks



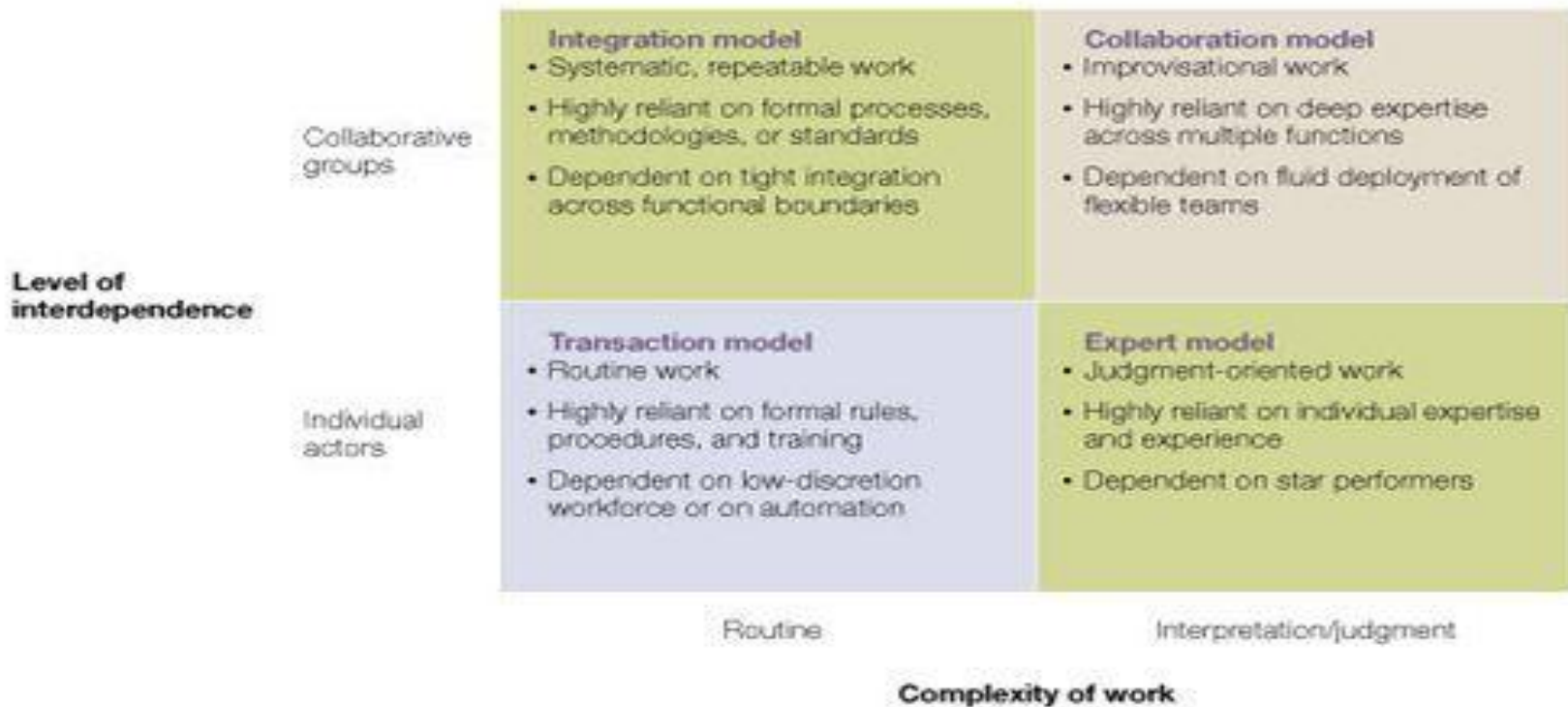
Work is changing

Different types of knowledge workers require different kinds of support technologies.

Structured-provision tools are commonly used

Free-access tools are commonly used but structured provision may be applied in some areas

Free-access tools are typically the only successful approach



T Davenport- Rethinking Knowledge work McKinsey Quarterly

Meddle and Sorrow the result

- **Irrational human**
 - Conflicted goals
 - The well trod road
 - I can do it all



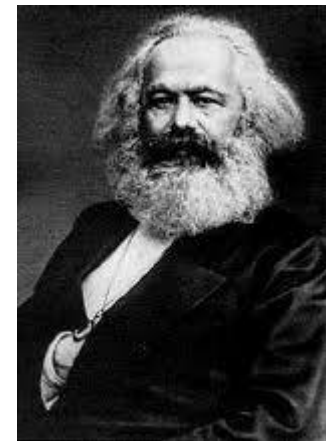
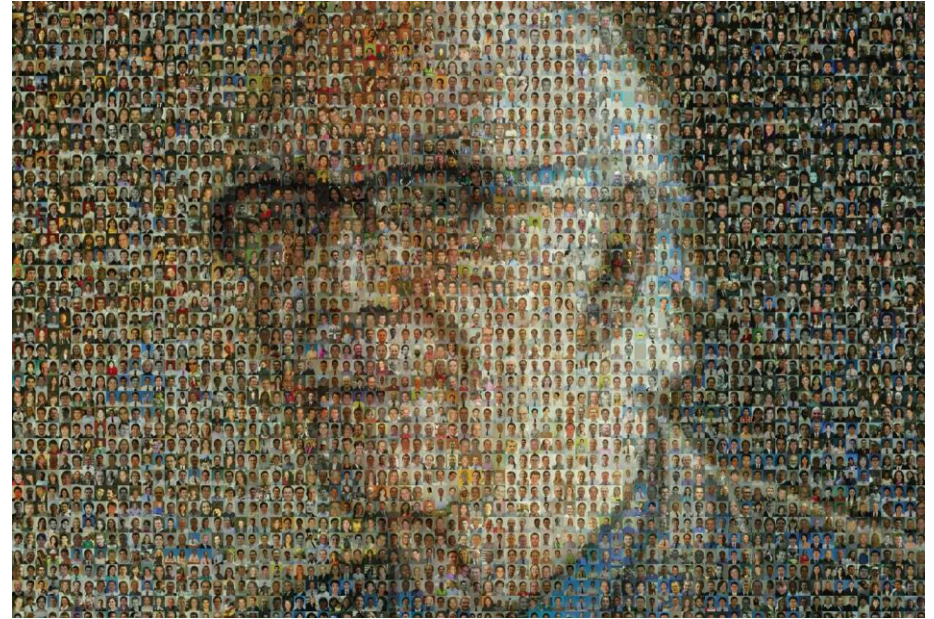
What is innovation?

An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.

- Continuous (Usher)
- Disruptive (Schumpeter)
- We live in disruptive times – speed of change Next 25 > last 100
- Agility

Key to Knowledge Sharing & Innovation

- **People**
 - Karl Marx was right
 - Collective Minds
 - Diversity
- **Process**
 - Appraisal
 - Way we do things
- **Profit = A Vle**
- **Technology**

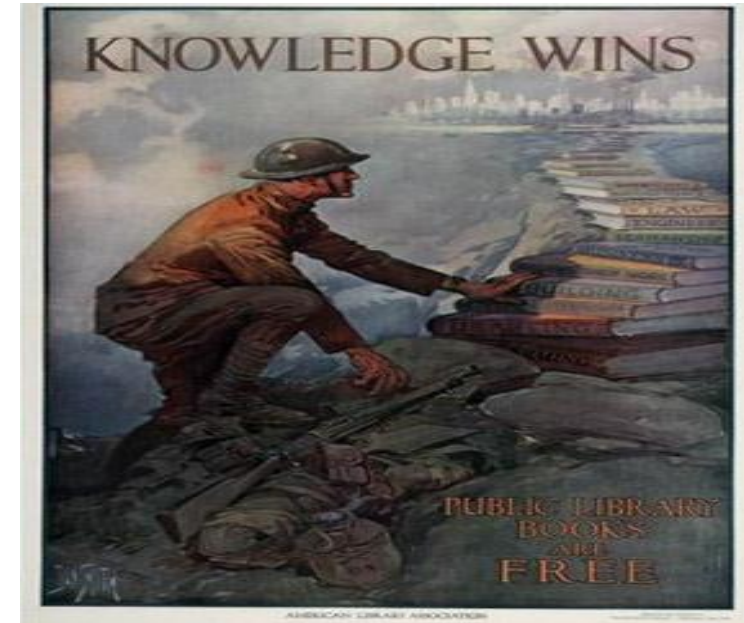


Key aims for KM to drive innovation

- RE-DUCE, RE-USE.
- Knowledge reviews
 - In the flow
- The skills networks
 - (Communities of Practice)

It's personal

that's why
we're here
to make a
dent in the
universe.

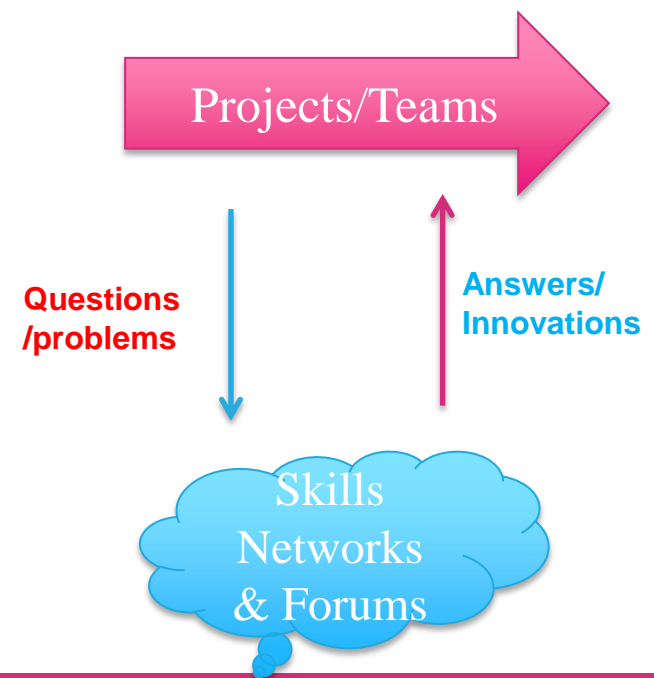


Arup Tapping into Global Knowledge - virtually!!

- Skills Networks/Forums – Arrow and Cloud
- JIT Focused problem solving – acquire & diffuse experiential
- Culture
- ‘Recognise Contributions
- Guanxi



I get by with a little help from my friends



Even a Hurricane can't stop Knowledge – Case study



Colleagues to the Rescue – CROSS POST & response

SYD
MEL
CHGEN
MAN
LAX
DUBAI
MIDLANDS
LDN
BGKOK
HK
SING


Rail Engineering Skills Network

Network Homepage
Forum
All Threads
New Since Last Visit
Advanced Search
Usage Statistics
Browse Other Forums [->]
Help Topics [->]
This Thread
[Add new message]
All Messages
My Information
My Subscriptions

Seawater Flooded subway tunnels (third rails)

[Add a new message to this thread] | Subscription:

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 **Subject:** Seawater Flooded subway tunnels (third rails)
Author: [Gillian Blake](#) (Principal), [NY Infrastructure General](#), [New York Office](#)
Date: 31 Oct 2012 17:27

You may have heard we have had some subway flooding in Lower Manhattan NY recently - see video below for example.


We've been asked by media (subject to confirmation from our client) to discuss general issues with flooding of subway tunnels with seawater and issues to be addressed with getting the system up and running (third rail). This may be unprecedented but does anybody have any examples of issues to share from other systems?

http://www.youtube.com/watch?v=Xkdv0H31d8&feature=player_embedded

Army Corps of Engineers are going to pump out the water to start with obviously....

Thanks
Gillian
(<http://forums.intranet.arup.com/?layout=thread&cfapp=85&threadid=70039#Message214892>)

[Top](#) [Previous](#) [Next](#) [Print](#) [Reply](#)


 **Subject:** RE: Seawater Flooded subway tunnels (third rails)
Author: [David Stuart-Smith](#) (Associate Principal), [Transport & Resources NSW](#), [Sydney Office](#)
Date: 31 Oct 2012 21:35

Gillian

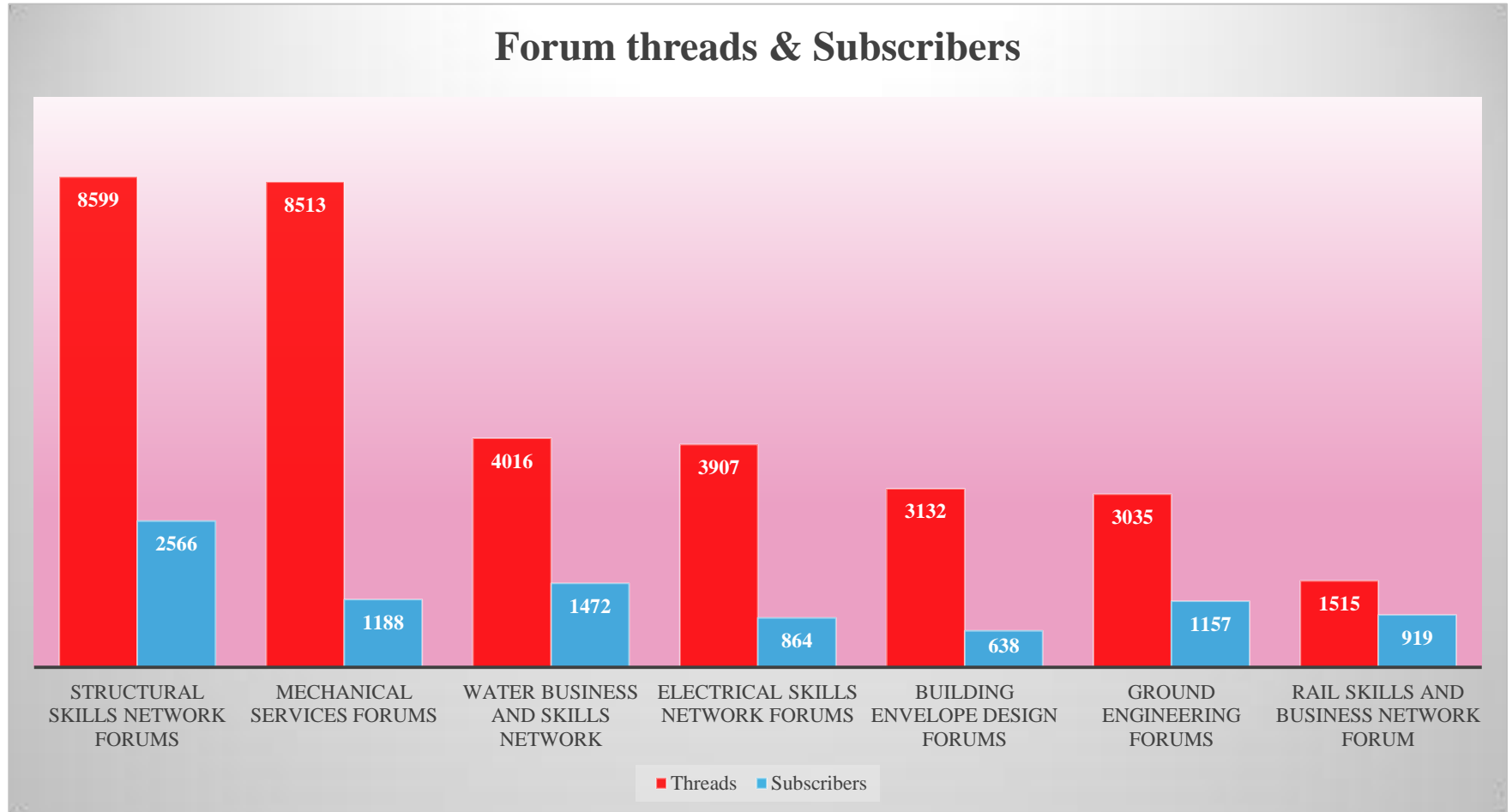
An idea a bit outside the square – have you thought of consulting someone with navy experience, specifically damage control. I suspect that they would have good strategies developed for quickly getting equipment back in serviceable condition following submersion in sea water!

Regards
dss
(<http://forums.intranet.arup.com/?layout=thread&cfapp=85&threadid=70039#Message214901>)

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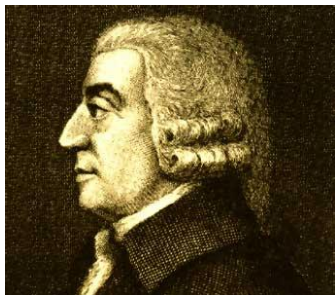
 **Subject:** RE: Seawater Flooded subway tunnels (third rails)
Author: [Roger Blackwell](#) (Senior Engineer), [Transport & Resources VIC/SA](#), [Melbourne Office](#)
Date: 31 Oct 2012 22:04

Threads & Subscribers- Aug 2014 – Aug 2015




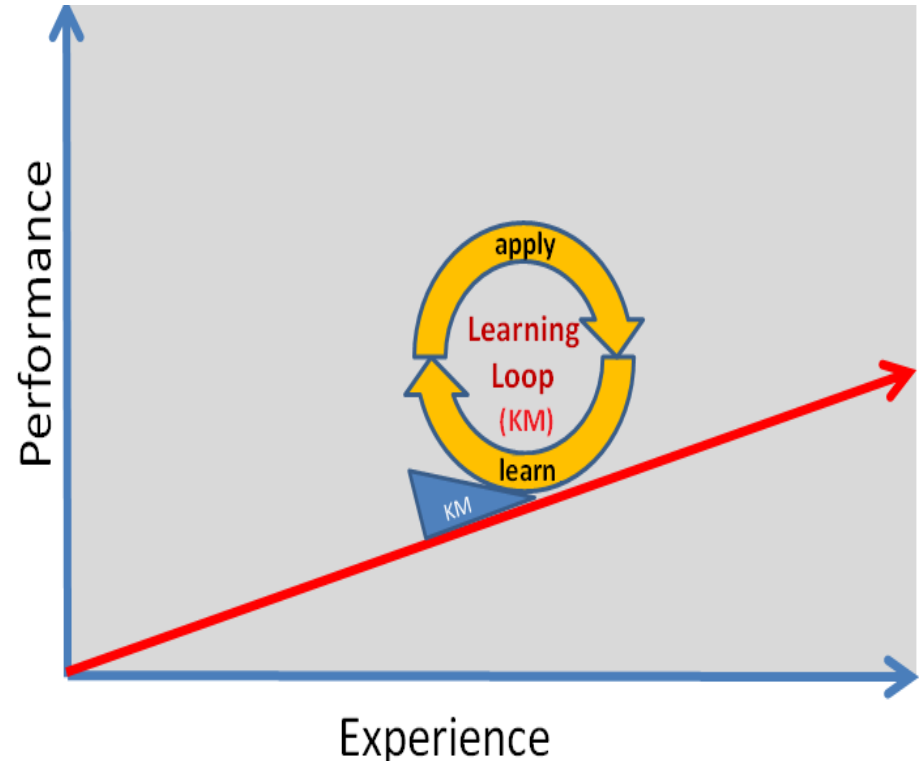
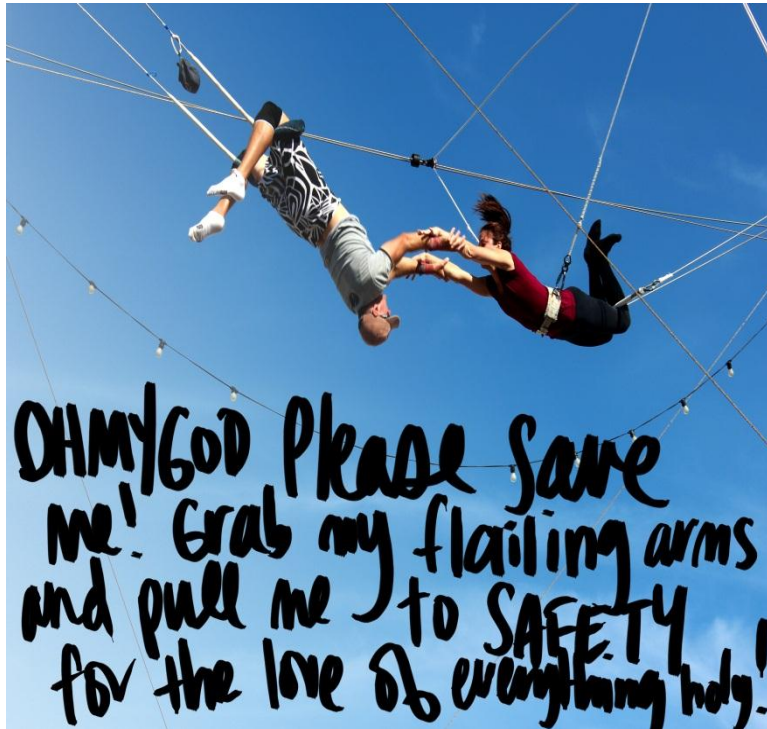
Why Share Knowledge?

- Network & Sharing Paradox
- People want to share – Adam Smith
- TRUST
- Kaizen



KRIF's – the gift that keeps on giving

- Leaner/agile approach
- Knowledge Reviews – the door wedge
- EPDCA  Learn, Adapt, Apply, Improve



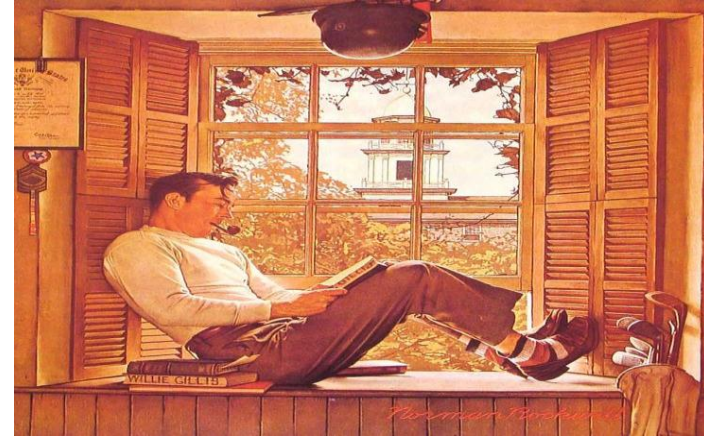
5 W's

5W's



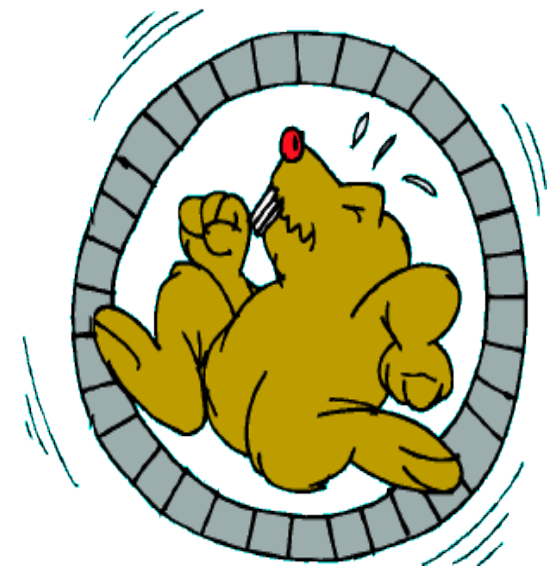
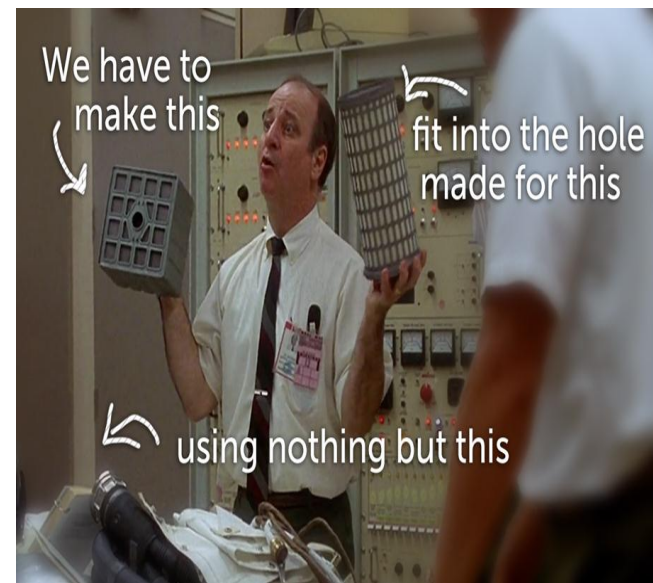
WIIFM/U

- Skills networks
- Learning Experiences
- Reduce losses on projects
- Invest in Arup portal
- Arbejdsglaede
 - Theory X & Y
 - Positive feedback



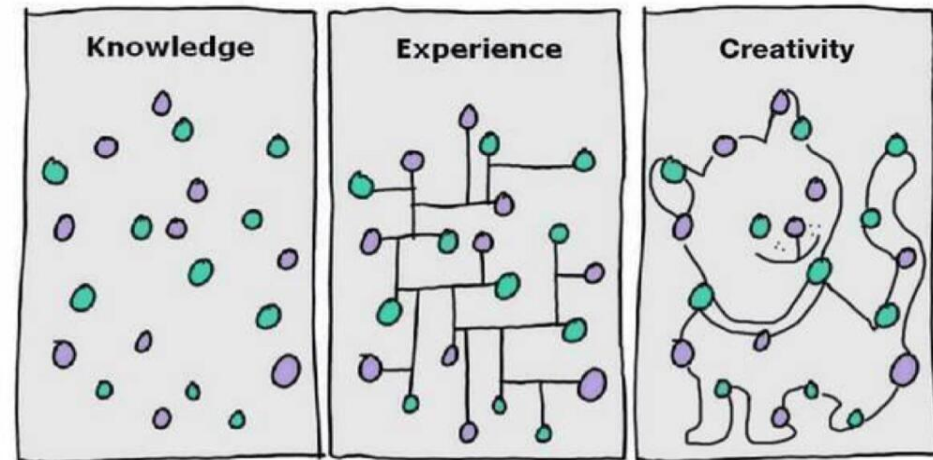
Reflection & Apollo 13

- **Opportunity to be creative**
- **Are you a hamster?**
- **Investment or cost - perception**
- **Thinking about what we have done**
- **Don't need incentivisation need time**



Carrying out a knowledge review

- Focus on the positives
- Areas for improvement
- Capturing the experience not documents
- Be interested & curious – ask questions
- Embed and Apply
- Diversity



Key Lessons from a donkey

- YCDBSOYA
- Genchi genbutsu
- Personal Curiosity & Responsibility
- The Endless River of Desire



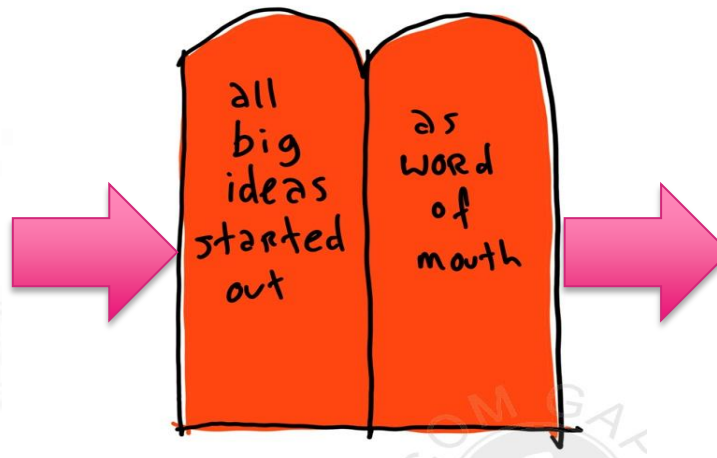
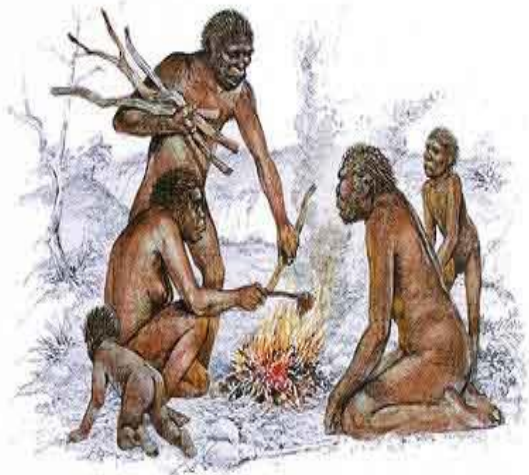
Work 2.0 and Being Human

- Commodification of Knowledge
- Being human is consciously to bring judgment, intuition, creativity, empathy and values into play. In business, it is the domain of entrepreneurial thinking and innovation, of weighing decisions, of collaboration and trust – qualities that are utterly different from the machine logic of networked sensors and processors.
- (Richard Straub Drucker Foundation 2015)



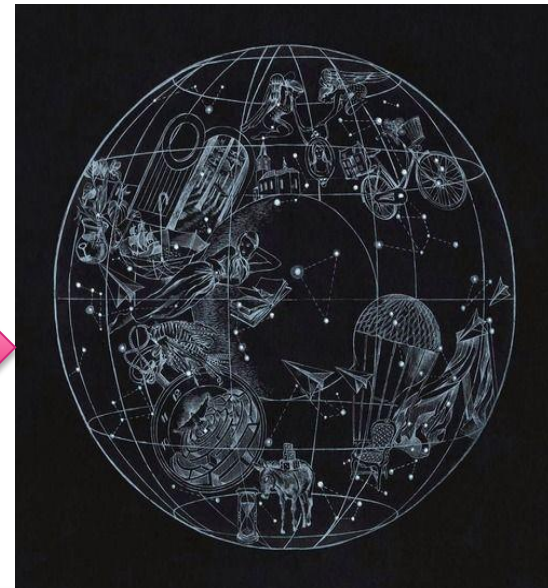
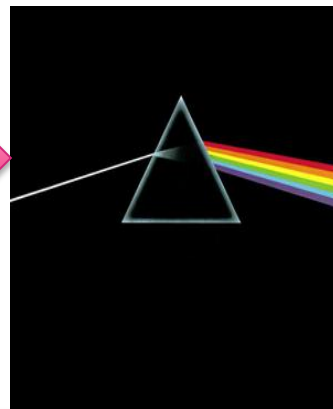
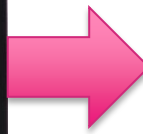
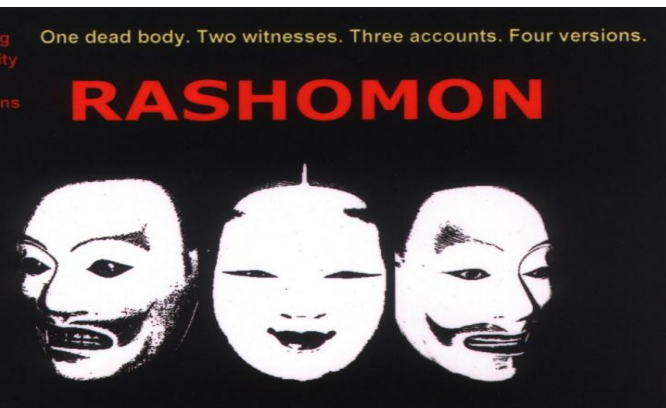
The human dimension – we are still evolving

- **Business is social**
- **Today we create innovation by synthesis by being**
 - Curious
 - Open Minded
- **It was ever thus - Ugg**



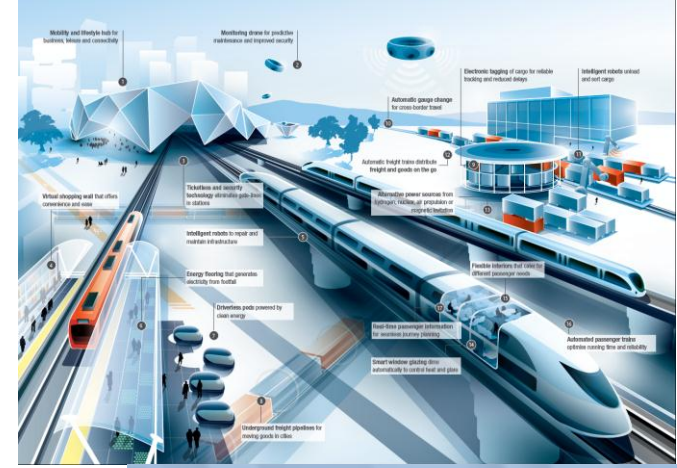
Our thoughts strayed constantly and without boundary

- **Rashomon effect**
- **Discussion opens up new horizons - Exploration**
- *Discussion can also confirm and endorse a view point or idea, support innovation through encouragement.*
- *1 problem (1VsE)*



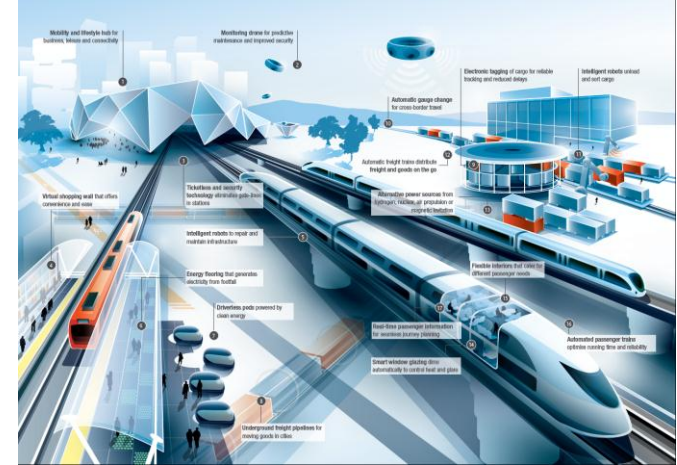
GLOBAL BRAINSTORMING

- Considered thought
- Reflective
- Introverts vs Extroverts
- Diversity of ideas
- No limit to Group size



GLOBAL BRAINSTORMING

- Idea Jam
- Post It notes
- Sent Global
- Wide range of disciplines
- Attribute
- Real champions



Brainstorming interface for "Future of Rail 2050".

Future of Rail 2050

What will rail and rail infrastructure look like worldwide in 2050?

There are no wrong answers, so please post as many ideas as you wish. The more the better, and from across all disciplines, practices and regions in Arup. In return we will credit the names of all Brainstorm contributors in our forthcoming thought-piece on the Future of Rail (due to be published in October 2013).

BRANSTORM CREATED ON APR 12, 2013 BY:	TOPS	IDEAS	BUILDS	LIKES
Marcus Morrell	75	146	11	64

Conclusion

Marcus Morrell
Dear all,

On behalf of the Rail Business I would like to thank you all for your overwhelming contribution to the Future of Rail 2050 brainstorm. Collectively you have amassed nearly 150 insights, ideas and comments - all of which will feed into the next phase of desk-research.

As mentioned, we will credit each of you in our forthcoming thought leadership publication (due towards the end of the calendar year). We will also send you a copy of the report as a further token of our appreciation.

Best regards,
Marcus Morrell, Foresight and Innovation
Colin Stewart, Global Rail Business Leader

Brainstorming interface for "Evaluating the Hyperloop Concept".

Evaluating the Hyperloop Concept

Arup is positioned to provide leadership in evaluating, and helping implement, innovative transportation ideas. Don Mullis, co-founder of Hyperloop, Tesla, and SpaceX, recently unveiled the Hyperloop concept, which integrates existing concepts in aerodynamic classics, as high speeds via low-pressure tubes. What is it?

While vacuum-tube transportation tubes aren't a new concept, Mullis's vision as a successful entrepreneur sends the concept past a lot more credence than previous proposals. Mullis's idea adds several unique features to the current concept: solar panels, low-pressure tubes that completely enclose, and turbine-assisted vehicles. However, just imagine what needs to be done to get such a novel idea off the ground - there is much to be studied and evaluated. Start with, for example, feasibility and costs involved with vehicles, guideway systems, tunnels and structures, aerodynamics and passenger comfort, energy use, designer and freight operations, emergency / contingency plans, economics, resources, land use, politics, environmental impacts. The list goes on and on!

Much has put out the attached thoughts below and is seeking for crowd-sourced feedback. There is no better collection of thinkers, engineers, and consultants than Arup's open-minded operating network. How far's put it to rest!

BRANSTORM CREATED ON APR 16, 2013 BY:	TOPS	IDEAS	BUILDS	LIKES
Gary Hsueh	4	32	2	16

QUESTION 1 OF 5 - 15 IDEAS

What aspects of this concept need to be evaluated, and how would you do it?

Grid of brainstorming ideas for "Evaluating the Hyperloop Concept".

ADD AN IDEA

You can also build on others' ideas by clicking on the a ball icon

ALVIN CHEN'S IDEA
There is infact a documentary a few years ago that talked about similar concept <http://video.howstuffworks.com/discovery/29327-extreme-engineering-the-transatlantic-tunnel-video.htm>

MORGAN ELLIOTT'S IDEA
The proposed air cushion is around 1mm thick. A really good construction tolerance gives a 15mm deflection at the middle. These need to be reconciled.

ALVIN CHEN'S IDEA
I don't understand. How come they are not using the maglev system for propulsion?

ALVIN CHEN'S IDEA
I'd like to see the calculations regarding lift - the low tube pressure will dramatically affect the amount of air required to provide the lift as the air will want to equalise the pressure field.

MORGAN ELLIOTT'S IDEA

Bricks in the Wall 我喜歡夢想未來而非追憶過往

- **Conversation, Connections, Collaboration and Contribution – drive innovation**
- **Ideas don't get smaller when they're shared they get bigger**
- **Stewardship – Leave the business better than we found it**
- **Time to get off the floor**



To a life consumed by slow decay

