Futures of virtual spaces for higher education in the government sector
immersive learning and knowledge exchange

Learning in the 21st Century Knowledge Society

OECD Higher Education Spaces & Places: Learning, innovation and knowledge exchange

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Futures of virtual spaces for higher education in the government sector

The presentation objectives

the futures of **virtual spaces** and the potential impact it has on training and education in the **government sector as benchmark** to education in whole. The unique features of education in the government sector will be explored throughout the case study of **PME** (professional military education) as a **demanding form of education** with short ROI and high impact. Some contemporary related concepts such as immersive learning and knowledge exchange are reviewed.

Firstly some theoretical constructs are explored;

- What do we mean by "futures"? Extrapolation of emerging trends in virtual spaces vs. social constructionist futures as impetus for higher education sector for investment and exploration of potential.
- The concept of "virtual space" - both pre-internet age and ubiquitous computing (continuum to the distance learning movement) – and as contemporary convergence of virtual and physical spaces replicating elements of 'physical world' into a virtual environment.
- The essence of virtual spaces is limitless and global (in space and time), and thus requires to re-visit basic notions of knowledge and managing it, and of learning infrastructure as enhancement to learning capabilities.
- The importance of emergence and networks in learning is emphasized, and examples of such learning networks are given from the government sector, where they act as a community of practice (CoP) infrastructure for emergent learning, using virtual spaces.

- **Examples from government sector training, education, and higher education**

Futures of Virtual Spaces

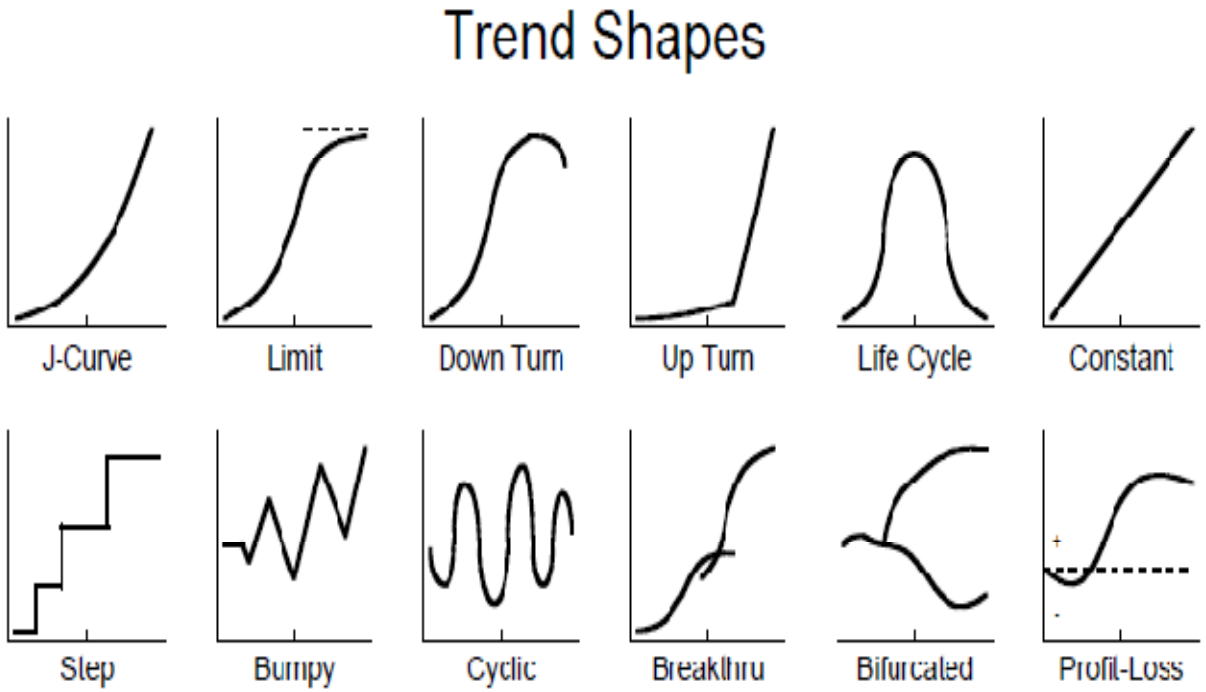
A framework to identify emerging trends in virtual spaces towards potential extrapolation, as it is experimented and exploited in the government sector education

"The **best way** *to predict the* **future** *is to* **create** *it." Peter Drucker*

Impetus for universities and higher education sector for investment and exploration of potential

Futures Epistemology –
Extrapolation from trends analysis

"The truth is out there" X Files determinism



(Earl C. Joseph)

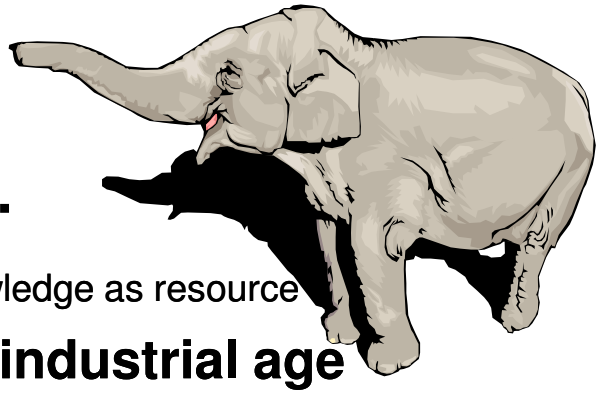
Futures Epistemology –
Social construction

"The **best way** *to predict the* **future** *is to* **create** *it." Peter Drucker*

- *Probable Futures*
- *Alternative futures*
- *Plausible Futures*
- *Wild Cards*

Constructed into scenarios (e.g. OECD 2029 of Education presented earlier)

Knowledge - interdisciplinary, complex, dynamic, emergent …



'Management' to be re-understood epistemologically, as it relates to knowledge as resource

Management – as a discipline is lagging in post industrial age after social construction in society… ("managers not MBAs" – Mintzberg)

Evolutionary epistemology requires understanding paradigms…

Knowledge Management as an integrating concept

(example from military context: US Army CAC)

A health warning on paradigms:
examination of KM,or learning reminds of the two blind people examining an elephant:
one feeling a leg is sure it's a tree, the other feeling the trunk is certain it's a snake.
The paradigm is dependant on where you are coming from and what your experience is!

The information age – equalizer, to flat learning and knowledge – from the idiosyncratic to organizational level

learning and managing knowledge are complementing paradigms in gov. sector

education is seminal to prepare leaders and managers in the government sector

File Edit Help

SECOND LIFE

Virtual spaces can reflect our familiar spaces and complemen learning – in time and space…

Ohio University Second Life Campus

First Name:

GA

Sign up for

Forgot your name or pas

But virtual spaces can go beyond replicating familiar physical spaces…

Only limitation to virtual space is imagination…

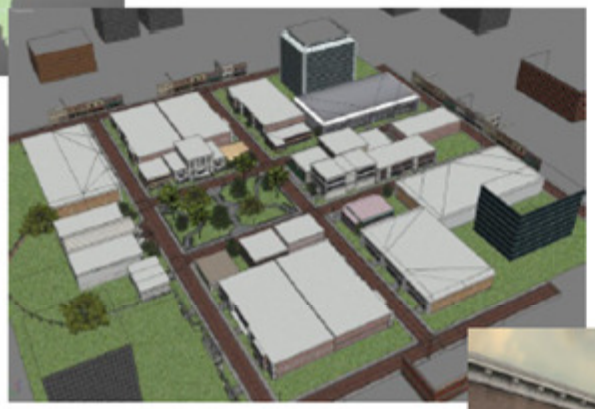
Examples of Virtual Spaces and environments in government sector

How does virtual spaces enable such global CoP to operate as knowledge network?

Virtual worlds
enhance interaction
immersive learning
and innovation

Secure Virtual worlds for Homeland security, Government sector, global CT networks, first responders – to learn, interact, run scenarios, Mash up virtual reality and real presence - hybrid reality..
example of NEXUS as such an environment…

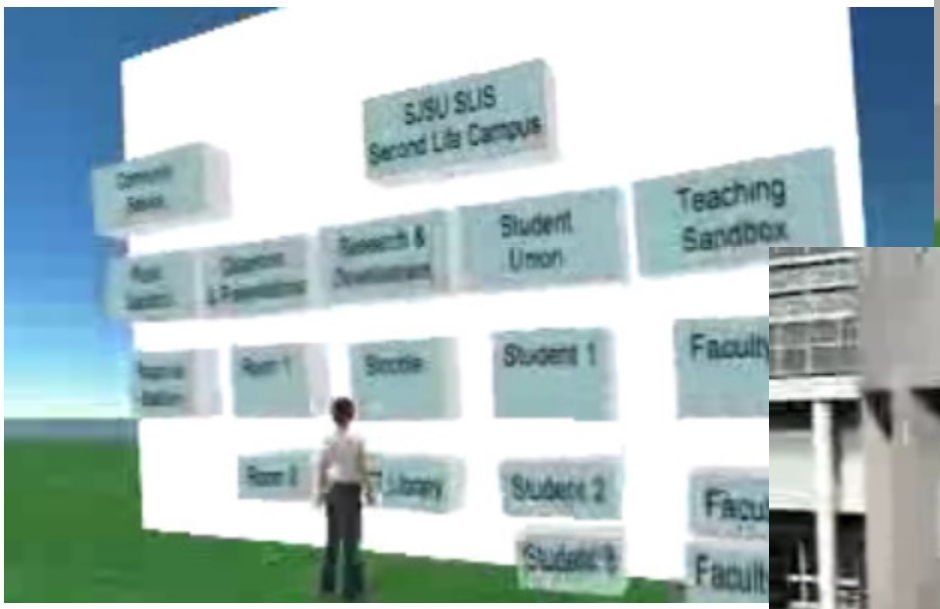
Interface is visual and intuitive- leveraging access to information



Training & Education, Collaboration, COTS Data-mashup

Concept implementation in other domains: Mash virtual and real presence for global training;
=> possibility to create virtual knowledge centers

Convergence of virtual space and physical space by reflecting in exact replica



Real life picture

Web 2.0 concepts **are** put to practice in gov.sector for knowledge centers (e.g. A-Space, Intellipedia)

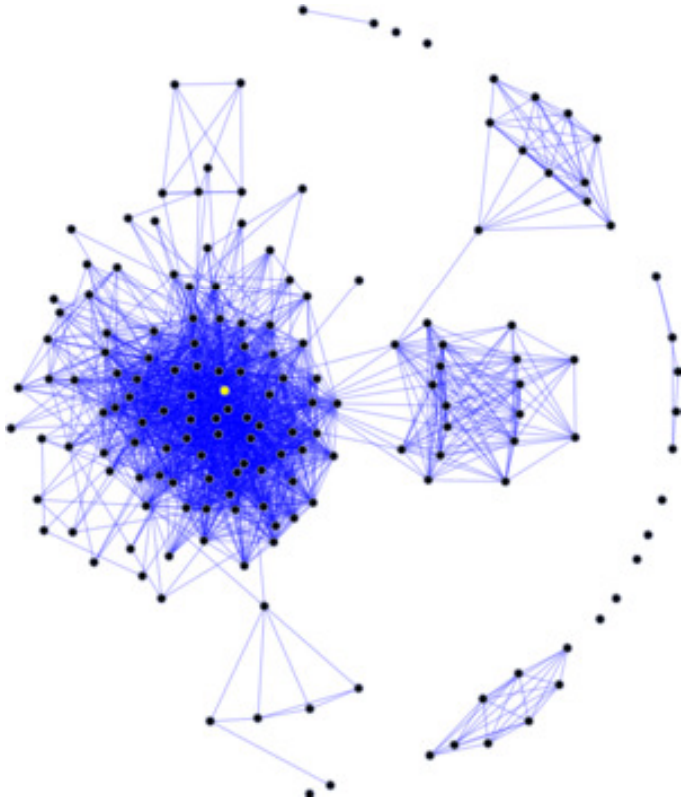
social construction and wisdom of the crowds = knowledge emergence
a virtual space is conceptual – it need not be visual 3d replica of physical space

Social Networks

social networks researched since late 1800s - Émile Durkheim

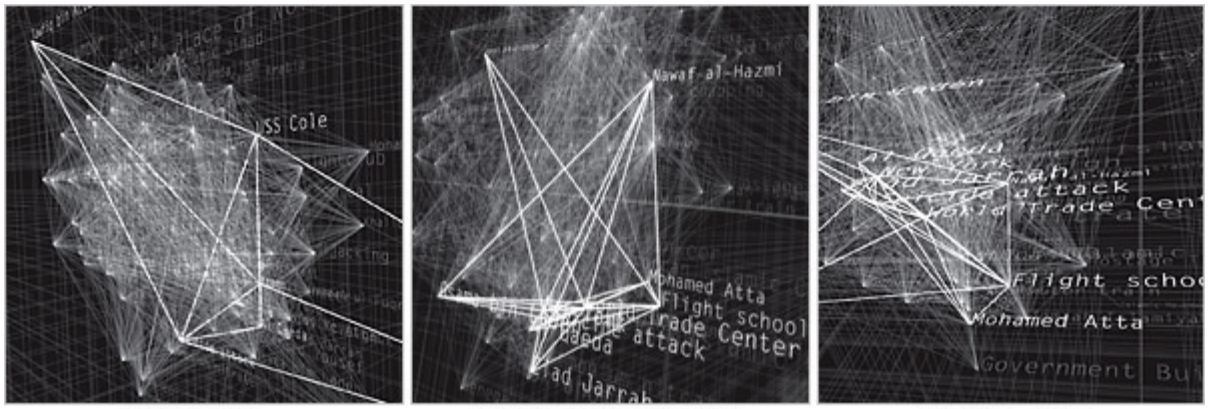
1967 small world experiment by psychologist Stanley Milgram – six degrees of separation

Social network analysis emerged key technique in modern sociology. It has also gained a significant following in anthropology, biology, communications, economics, geography, information science, organizational studies, social psychology and other domains.



It takes a network to cope with a network!

- Network organizations based on existing structures
- Unobtrusive OpKM, critical thinking mechanisms
- Caveat: industrial age organizational solutions to post modern challenges – important but not suffice (e.g. inauguration of DHS,DNI)



OCT. 12, 2000 JUNE 2000 TO JUNE 2001 SEPT. 11, 2001

It takes a network to cope with network- *knowledge and knowledge management (KM) 'NetWar,' Implementing familiar vehicles from the KM toolkit such as social network analysis (SNA), and KM in intelligence (DNI, Fusion)*

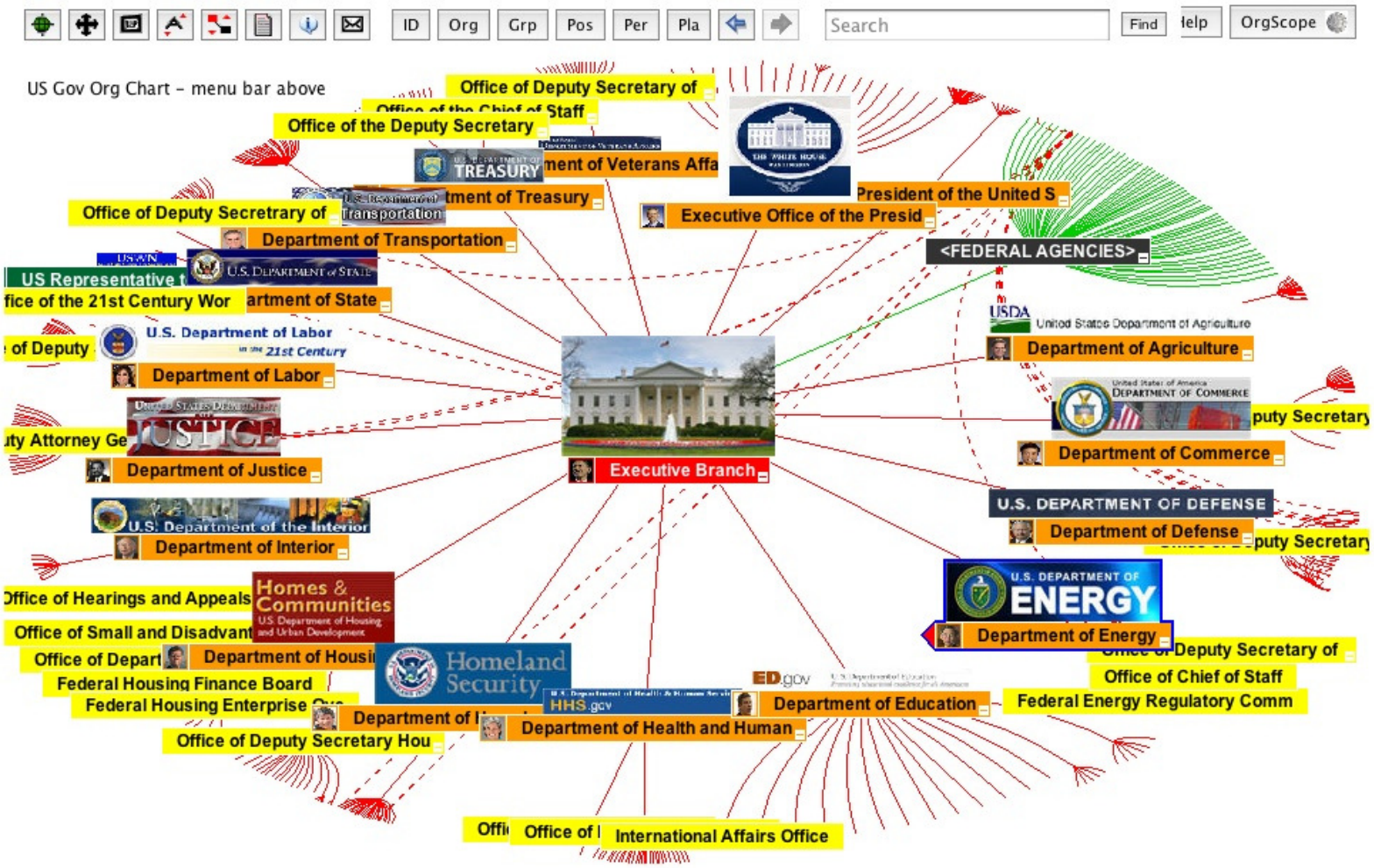
not enough to "centralize" higher education – but distribute it on virtual space!

Cyberspace and internet =enablers

"Edge Power" – a power shift in education from organizational centric to individuals

- Cyberspace usage for education
- Web 2.0 tools and approach – enable "emergence" bottom up knowledge
- crucial elements of "wisdom of the crowds" and social construction
- No need for heavy R&D investment – only technology-savvy and R&D "situational awareness"
- Every available COTS ICTechnology – is put to practice
- Technology implementation is easier than hierarchies operating by bureaucratic organization

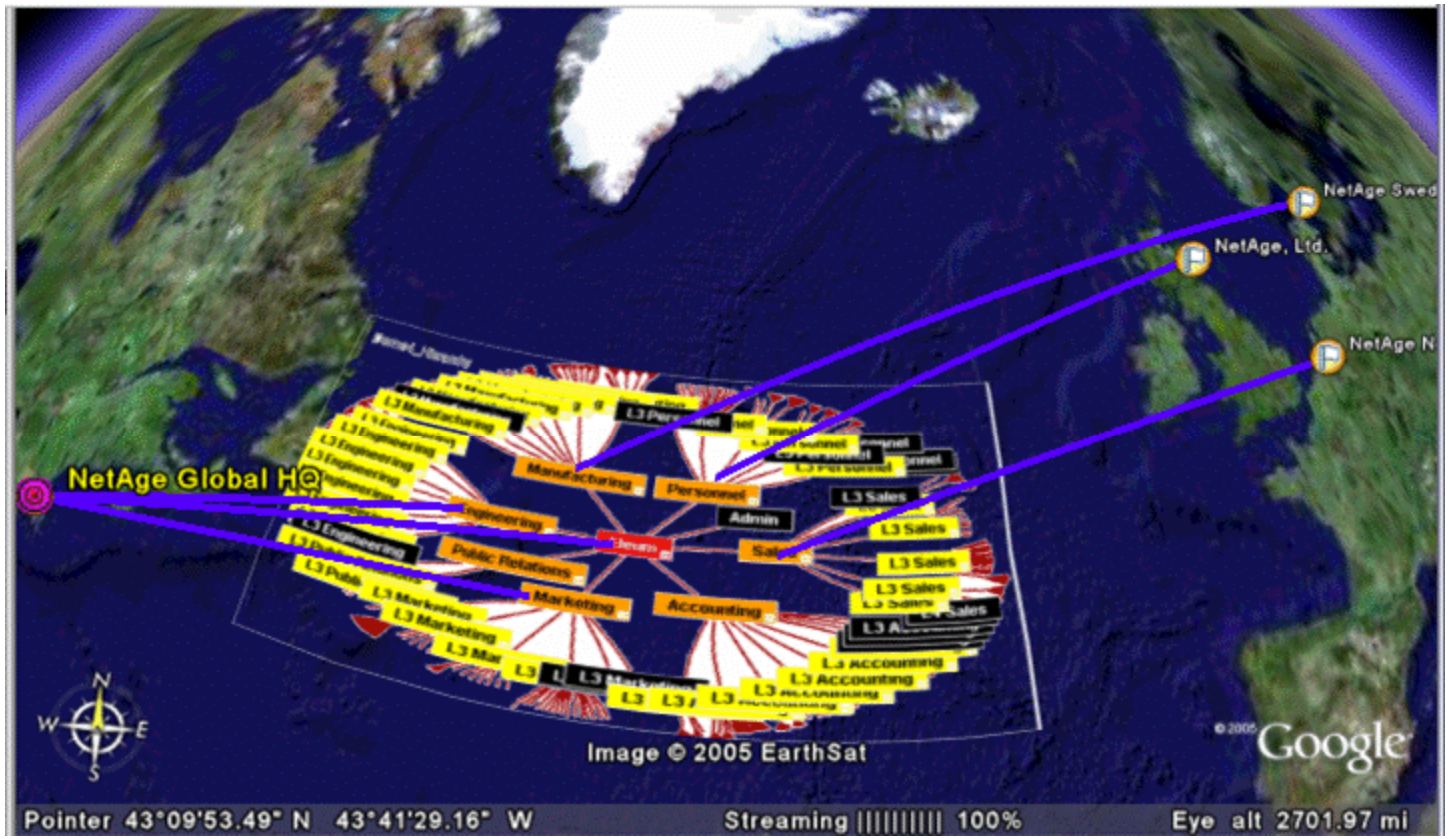
A Familiar Organization- in NetAge OrgScope



"We can't solve 21st-century problems with 19th-century organizations"

NETWORK

Virtual spaces enable organizations to connect - Training and education to be un-dependent



2701 km

Example of network…in health

World Health Organization

GLOBAL RESPONSE
GLOBAL ALERT

Global Outbreak Alert & Response Network (GOARN)

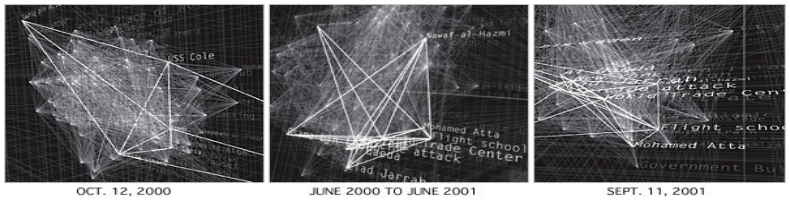
The Global Outbreak Alert and Response Network (GOARN) is a technical collaboration of existing institutions and networks who pool human and technical resources for the rapid identification, confirmation and response to outbreaks of international importance. The Network provides an operational framework to link this expertise and skill to keep the international community constantly alert to the threat of outbreaks and ready to respond.

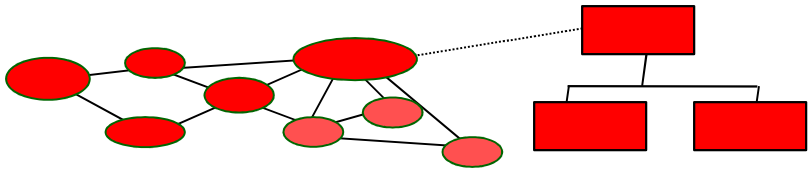
Setup in 1997, formalized in 2000,
Successfully responded in 2003 SARS

SARS was recognized at the end of February 2003. WHO coordinated the international investigation with GOARN assistance and worked closely with health authorities in countries to provide epidemiological, clinical and logistical support required.

Example -networking existing organizations…

It takes a networked hierarchy to beat a network! (Mains & Ariely 2007)





Network Enemy

Enemy -- complex adaptive systems

Compound Enemy

Front-line fighting forces

The funnel of knowledge from and to the field

Challenge: knowledge-network operating forces

Operational knowledge content analysis through lessons learned

Fusion point for knowledge through networks

Backbone-Validated Knowledge

Example of **CAC-Knowledge**

Challenge: knowledge network organizations to better support operating forces

K-org

K-org

K-org

Red

K-org

Entwine historical Knowledge

Permeate, test Knowledge

Pedagogy as the adaptive gene in government sector:

The need to revise the pedagogy of the "long war" – enhance towards short and instantaneous learning cycles

qualities for learning are learnable => adaptive ability as catalyst for change, enabling pattern-recognition in the 'long war', in short time, allowing to challenge operational paradigms.

This ability should be pedagogically installed as 'adaptive gene' 'entwined' into organizational DNA through education, in order to help transform, and develop real-time adaptive-abilities.

Enhance education (domains of knowledge, learning capabilities)

Enhance training (short cycles, taken to learner, change 'how' we do

military organizational evolution - to adapt to constantly changing environment

(Expectation for short term solutions - in a "long war"…)

Virtual spaces allow to network hierarchies and enhance education to immersive learning

Evolutionary Epistemology: Knowledge evolution = survival of humanity !

Only a global view of knowledge can cope with spectrum of post-modern challenges

Immersive learning and web 2.0 virtual space early approach from gaming…

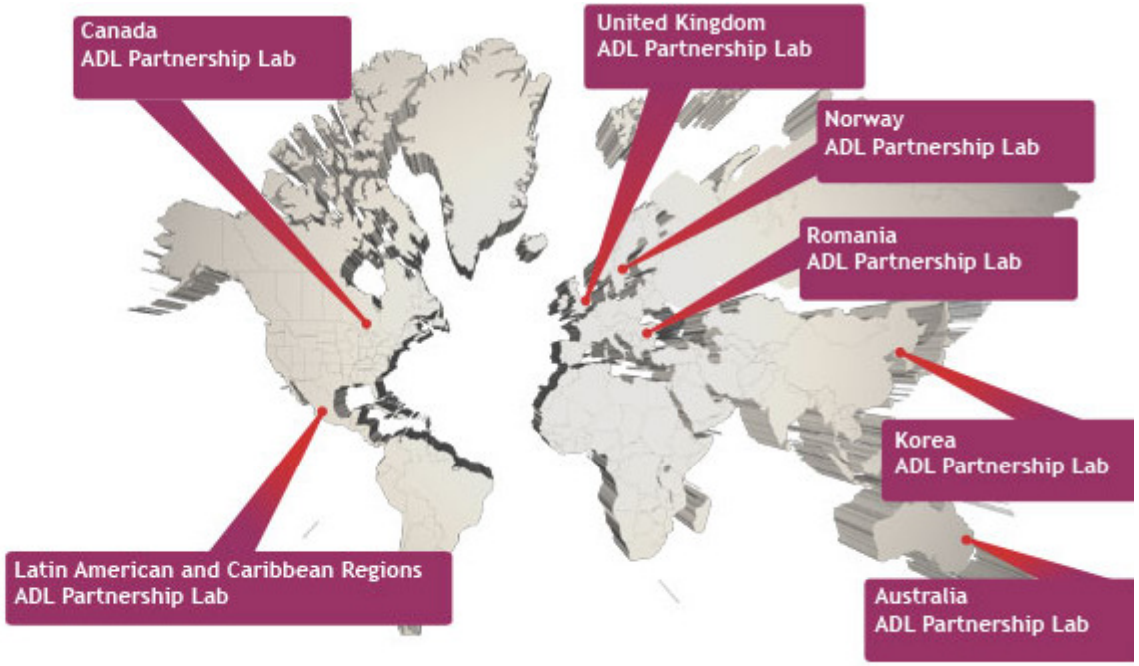
Simulations and virtual spaces are the essence of military environment for training and education –

Government sector attempts to create standards for LMS , virtual spaces

The United Kingdom Advanced Distributed Learning Partnership Laboratory (U.K. ADL Partnership Lab) formed in 2002, is located in Telford, England. It is a collaborative project between ADL and the Learning Lab at the University of Wolverhampton. The U.K. ADL Partnership Lab promotes global e-learning standards development and acceptance. The U.S. and U.K. collaborate on producing sharable content and joint research projects.

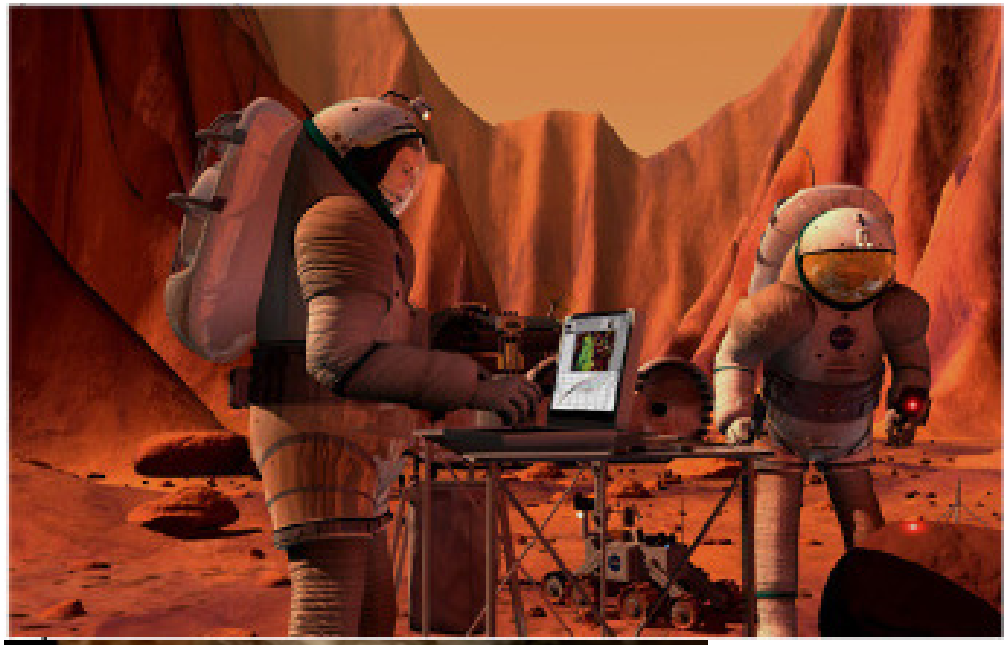
Canada ADL Partnership Lab

The Canada Advanced Distributed Learning Partnership Lab (Canada ADL Partnership Lab), formed in 2004, is located in Kingston, Ontario,



To include network of co-labs around the world for uniform standards…

Virtual Space… sometimes has to be virtual!! NASA virtual spaces…



NASA CoLab…

CoLab's Second Life Mission

KM vision

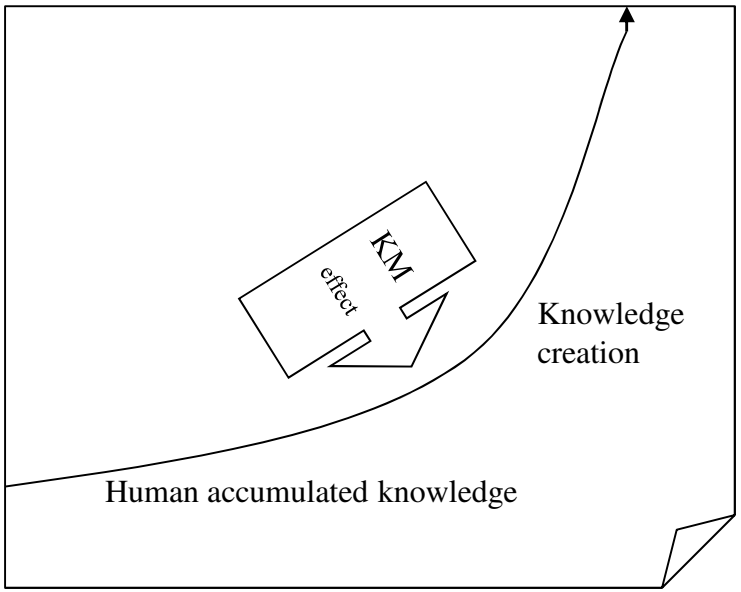
a Global View of Knowledge

Dr. Gil Ariely

vision of Knowledge Management is as catalyst for the creation of human knowledge, moving us up the trajectory in the hyperbole curve of human knowledge creation, accelerating the way we built on past generations of knowledge in all domains.

(Ariely, 2003; 2006)

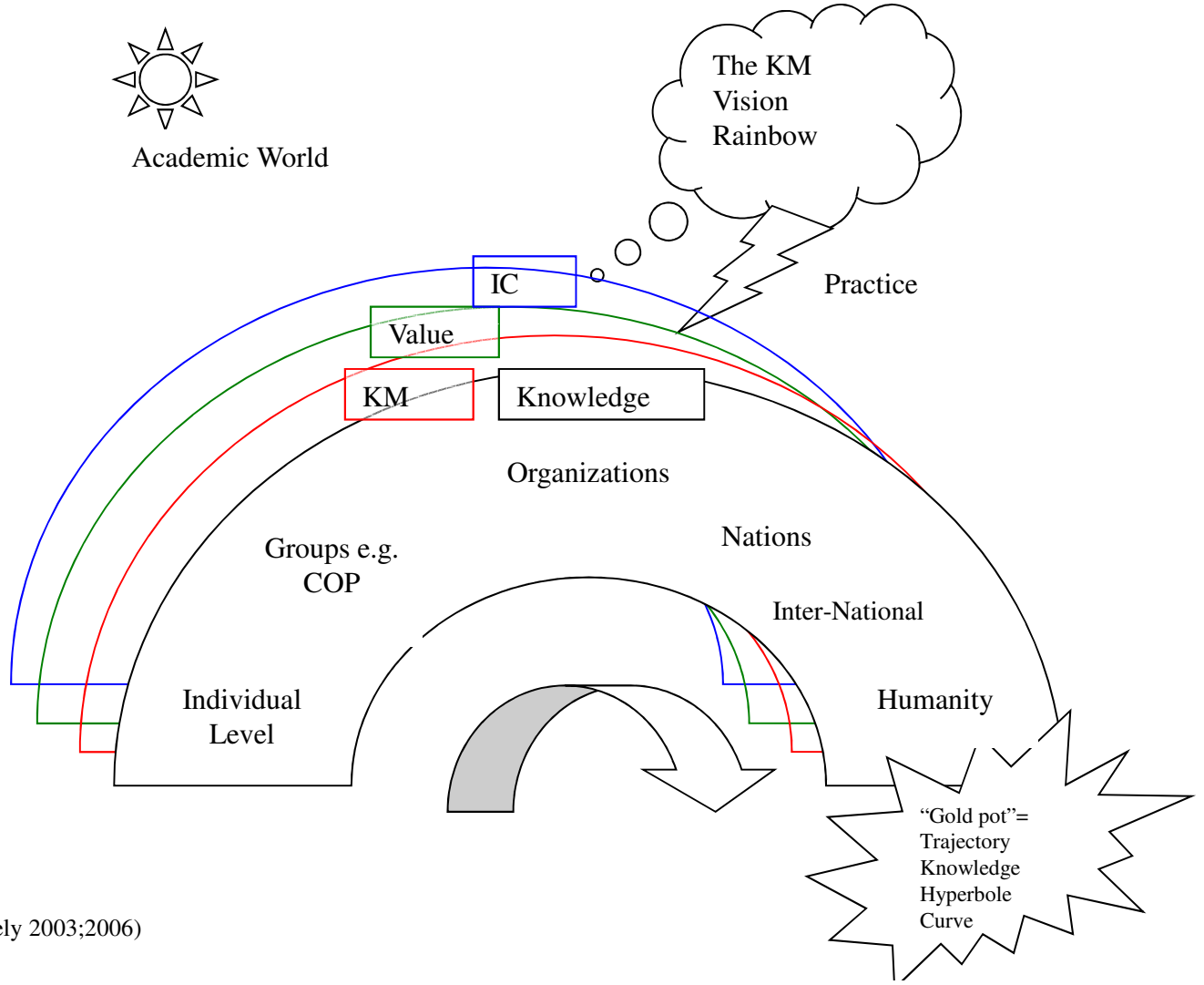
Accelerating knowledge in evolutionary epistemology is not a luxury but an altruistic requisite for survival of humanity confronting existential risks (nature, terror etc.)
It is task for governments' KM !



KM Vision- the human knowledge hyperbole
Ariely 2003;2006

Knowledge Management as a Methodology towards Intellectual Capital (Ariely, 2003)

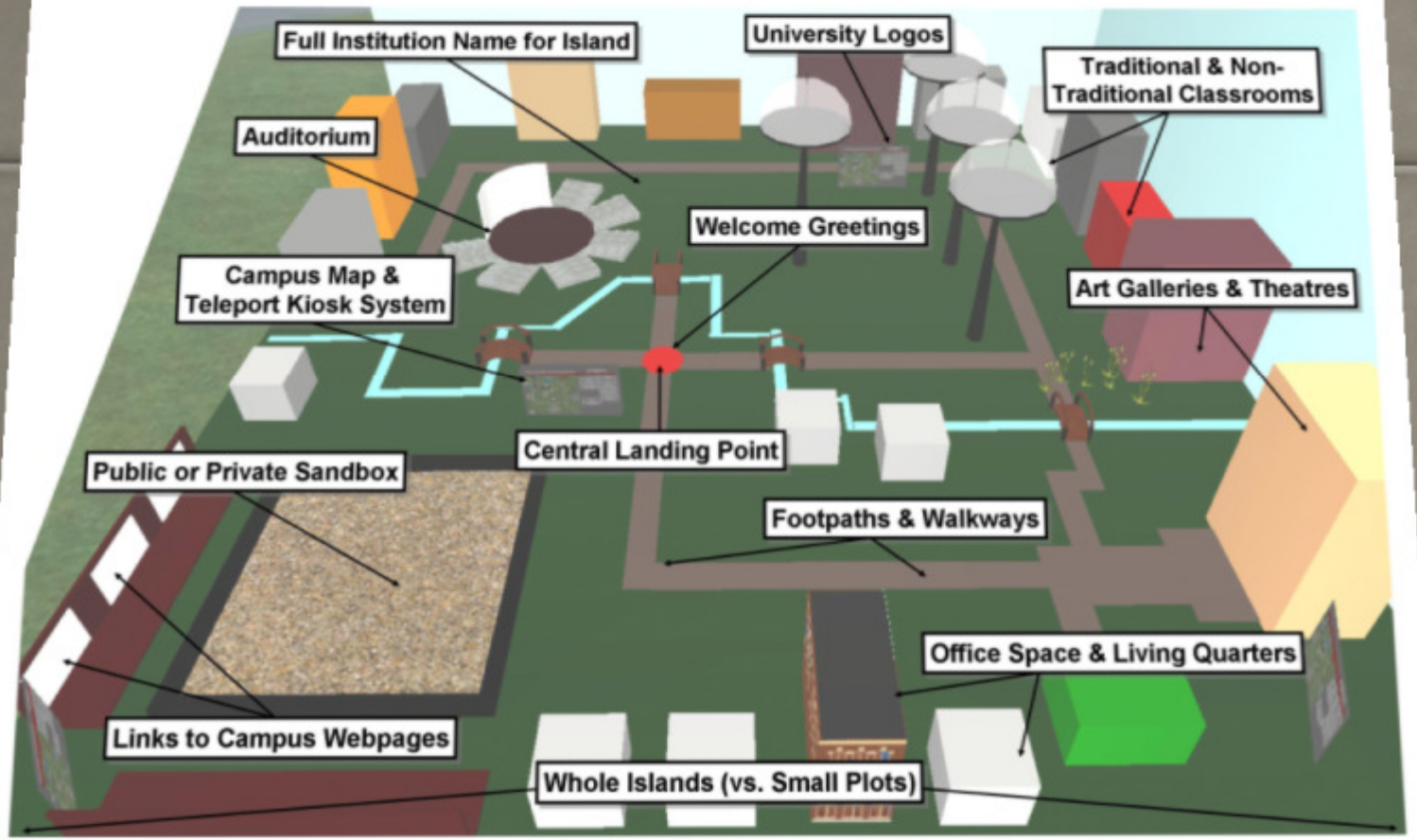
KM Vision rainbow



KM Vision Rainbow (Ariely 2003;2006)

UNIVERSITY OF Cincinnati

Emerging "Best Practices" for Campus Builds in Second Life



Based on observational study conducted April – May 2007.

For more information, contact Chris Collins (chris.collins@uc.edu) or Dr. Nancy Jennings (nancy.jennings@uc.edu).
University of Cincinnati Second Life Learning Community: http://homepages.uc.edu/secondlife

Futures of virtual spaces for higher education in the government sector

Virtual spaces prepare the ground for a different, global ball game!

knowledge = Power

KM is Power (force) Multiplier !

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