

**13th International Association for Sport Information World
Congress
11-13 March, 2009 - Canberra, Australia**

Hyperconnectivity.

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Australian Government
Australian Sports Commission



AUSTRALIAN
INSTITUTE OF SPORT

13th IASI World Congress

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*Building and sustaining sport information communities -
through connectivity, collaboration and sharing*



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*Building and sustaining sport information communities -
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Mr. Alexis Lebedew

Performance Analysis Coordinator, Australian Institute of Sport

Hyperconnectivity

or
How to Win Gold Medals on a Limited Budget

Alexis Lebedew - Performance Analysis
24th November, 2008

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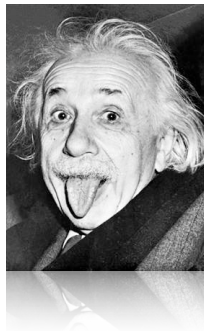
As I'm preparing this presentation a 52 year old friend of mine who coaches the USA Women's Volleyball team wrote to me "so, i'm watching college fb on the tv, and vb on the computer, in addition to having a conversation on Skype with a guy in Australia!". New web based technologies are for EVERYONE, not just Generation Y.

This presentation will focus more on practical rather than technical.

Essence of Performance Analysis

Paraphrase Einstein's quote saying creativity is more important than knowledge:

"Usability is more important than Functionality"



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Perspective of Performance Analysis:

"Pressing more than 2 buttons to make a system work is too many"
"Capture/Store once, use in multiple ways"

Needs a balance Practical and R&D - Useful and Used

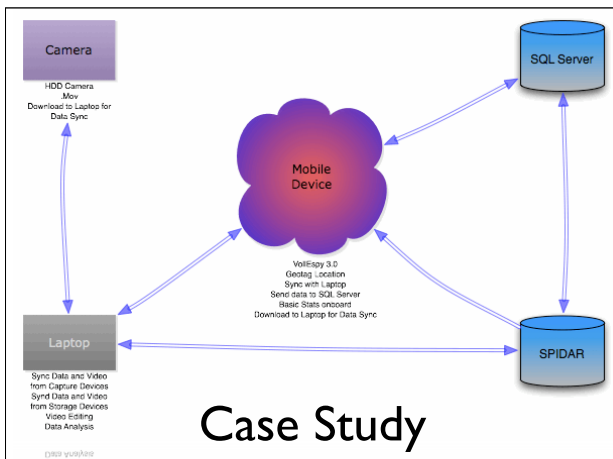


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This is Performance Analysis. 3 aspects, equally important.

Communication and information are the links which join the areas together.

A weird combination of Hard Science/Technology, Soft Sciences, and Athletic Performance, based on personalising service.



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Left is the field - Right is the AIS - video and data - Hub is the mobile device

Camera - no FireWire anymore! FireWire is dying out as capture is possible on HDD Cameras. Not ideal yet but huge potential.

Laptop - will still need this in the next Quad

Hub - Coach/Support in the Field

SQL Server - Automate all Data dumps from Mobile Device/ Laptop

SPIDAR - is now coming into its own

Everything is accessible through web connectivity at the Hub.

Changing Paradigm for this Quad

- 2000-2004 we were bound to our desktops and offices
- 2005-2008 we were bound to our notebook computers/hard drives and power
- 2009-2012 we don't have to be bound to anything. Ubiquitous connectivity is nearly here. We just need to have the data organised and accessible.
 - High Speed **wireless** connects us to the data.
 - **Geotagging** adds context to the data.
 - **Semantic Technologies** put all the data in context.
 - **Cloud Computing** removes the need to carry the data with us.

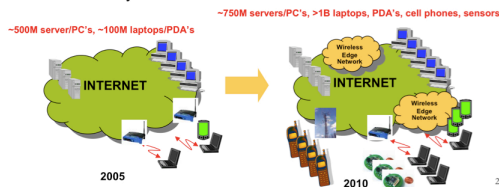
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We need to create new systems and workflows because of the Changing Paradigm.

The early part of the progression described is somewhat simplistic, but 2009-2012 is not.

Wireless is THE Key Driver for the Future Internet

- Historic shift from PC's to mobile computing and embedded devices...
 - >2B cell phones vs. 500M Internet-connected PC's in 2005
 - >400M cell phones with Internet capability, rising rapidly
 - Sensor deployment just starting, but some estimates ~5-10B units by 2015



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Slide is from a paper by a XEROX expert in Hyperconnectivity.

Point is looking at the bottom two pics. Look at the change.

In 2005 - most of the connections were to computers, with some to laptops.

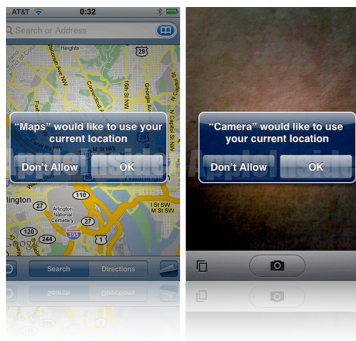
2010 - prediction is MOBILE. In 2008 it is obvious that this is turning out to be true.

GeoTagging

The process of adding geographical identification metadata to files such as photographs, sensor data or video.

Generally in the form of latitude/longitude co-ordinates and time.

Can be automated using GPS.



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Best Example - if you have 'geotagged' MinimaxX data over the past 4 years - you can look back over the data and, by linking with existing 'Weather' databases, calculate trends based on the lat/long/time and related to weather.

Semantic Technologies

An evolving extension of the World Wide Web in which the semantics of information and services on the web is defined, making it possible for the web to understand and satisfy the requests of people and machines to use the web content.



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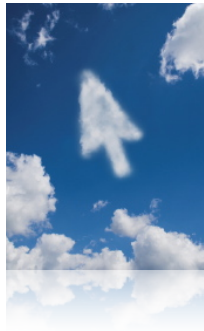
Semantic Technologies are about putting a layer of context on web data.

2 ways - 1 get computers to automatically 'understand', 2 attach 'metadata' to information as you collect/store it (and make it web accessible)

eg: Google Mission "To organise the world's information and make it universally accessible and useful.... To do this you have to first gather the information. Then make it available online."

Cloud Computing

Gartner:
A style of computing in which massively scalable IT-related capabilities are provided 'as a service' using internet technologies to multiple external customers.



Your Workplace need no longer be locked to a particular location or device.

Rather than having 'Word' installed on your computer, 'Word' is 'installed' on the internet, so you just log on from any computer and work on your document.

What does it mean to AIS - we **MUST** have our internal servers easily available to staff and athletes through the web. Effectively we can create 'Applications' which users will be able to operate in order to achieve their needs.

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Question

Have you ever tried to connect something to the internet but couldn't?



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Hyperconnectivity

- "Imagine that any application that stores information or creates it can seamlessly interact with collaboration and communications tools and services and can do so in a unified way."
- John Roesse, CEO Nortel

Hyperconnectivity is the 21st Century Electricity - A little hard to understand at first, but pretty soon you can't imagine a world without it.

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Hyperconnectivity

A trend in computer networking in which all things that **can or should** communicate through the network **will** communicate.



This encompasses

- person-to-person (wireless),
- person-to-machine (cloud computing) and
- machine-to-machine (geotagging, semantic technologies) communication.

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Devices which currently connect to internet:

- mobile phones
- computers
- MP3 players
- GPS receivers
- cameras
- cars
- refrigerators
- coffee makers
- watches
- etc.....

And plenty more to come

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Practical Definition

Any given coach and/or support staff in London 2012 will be carrying somewhere between 3 and 10 different devices which capable of collecting data and communicating with each other.



We intend to ensure they they connect seamlessly and instantly access whatever data they require.

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Why Bother?

- it will **SAVE TIME**.
- it will **REDUCE PERSONNEL REQUIREMENTS**,
- it will **SAVE MONEY**, long term,
- it will enable more informed decisions and provide far greater **DEPTH** of information for decision making purposes in the same timeframes,
- **IT WILL MAKE US SEEM SMARTER!**

SAVE TIME - by automatic - single handling
REDUCE MAN HOURS - generated by multiple handling/ inefficiency/finding what you wanted! (When you develop a system/device, pay as much attention to the data management as the data collection!)
MONEY - from travel - more effectively service locally
DEPTH - link together things that we currently can't like because they are sitting on desktops and external hard drives

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How do we Exploit it?

We must **concurrently** develop:

- Automatic connection
- Something worth connecting to



Just being connected doesn't matter.

Just having semantic technologies isn't enough.

NEED TO DO BOTH CONCURRENTLY!

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How are we doing this?

- Making it **WORK**
- Making it **EASY**
- Changing **HABITS**
- **PERSONALISE**

Tailoring a solution to a specific problem AND doing it in such a way that maintains the integrity of the underlying IT infrastructure.

Minimise duplication and optimise the benefits and effectiveness of available resources.

Sharpen and reshape existing structures.

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Current Projects

- ATrax
- SPIDAR/SecureWeb
- Beach Volleyball Data System
- PAU Updates

ATRAX - collaboration with Analytics and AppsDev.
SPIDAR/SecureWeb - collaboration with WebServices, IT, NSIC.
Beach Volleyball Data System - collaboration with Sensors, IT, Analytics.
PAU Updates - collaboration with WebServices.

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What Can I Do?

- Any time some of your data is entered twice, ask yourself if it can be entered once but accessed multiple times?
- Every time you print something or create a .pdf, ask yourself if it could just be displayed on a monitor with a link and automatically updated?
- Any times you are developing a way to capture data, develop a way to store and manage that data concurrently so that it links with all other data stores.

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