



Where to start – some observations on current Industry trends suggests that today's leaders are leveraging Cloud based technologies to balance optimising their existing systems with Innovation

Drives need for continuous IT  
**OPTIMISATION**

**OPTIMISATION**

**INNOVATION**



Fuels investments in  
**INNOVATION**

**Reducing costs to help invest and drive innovation**

There are three core pillars to achieving this balance

# OPTIMISATION

Reduce Cost & Minimize Risk

# INNOVATION

Rapidly Add Business Value



1. Software Defined Environment



2. Cloud Operating Environment

3. API Economy

**Focus on Operational Costs**

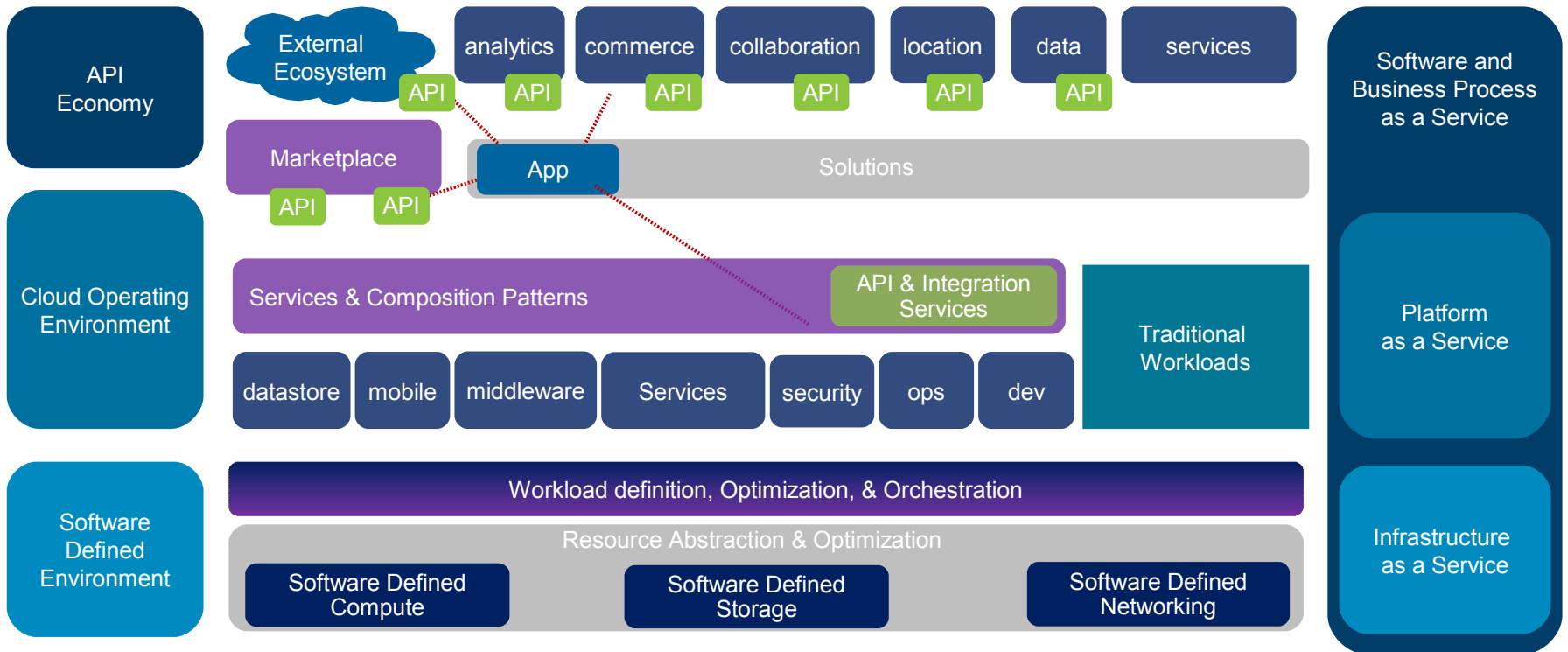
- Consolidation (solutions & infrastructure)
- Operations Automation (reduce skills & risk)
- Move from manual policy enforcement to analytics driven enforcement & optimization

**Focus on Speed and Agility**

- Assemble solutions from verified software components & services
- Dev / Ops process enables fast iterative development
- Fast deployment & redeployment of infrastructure resources using Software Defined Environments

# 1. Open Architecture

- This desire to reduce costs but drive innovation requires a number of enablers to achieve this vision
- The first of which is a flexible architecture that can swiftly accommodate change



An open cloud architecture is emerging...

## 2. Open standards

### How to benchmark? - some thoughts to guide?

- Does the standard enjoy broad adoption? Are there multiple vendor implementation of the standard, especially by the vendors you and your partners buy products from?
- Does the standards governing body have public interfaces and solicit public input for future iterations of the standard?
- Is the (emerging) standard on a path to long term Stewardship, maybe through an official standards body or and effective open source community?

#### Benefit

Choice

Flexibility

Speed

Skills

#### Outline

Choices made today  
DO NOT limit choices  
for the future

Can connect to other  
internal or external  
groups using differing  
technology

Avoid reinventing the  
wheel and adapt  
quickly

Skilled resource (in  
theory) will be easier to  
find

The Digital Standards Organization (DIGISTAN) states that "an open standard must be aimed at creating unrestricted competition between vendors and unrestricted choice for users. Its brief definition of "open standard" (or "free and open standard") is "a published specification that is immune to vendor capture at all stages in its life-cycle." (Wikipedia)


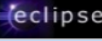

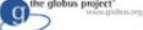

### 3. Open source

Many organisations (and vendors !!) tend to focus on the licensing cost of Open Source Software, in reality the principles of OSS encompass three areas:

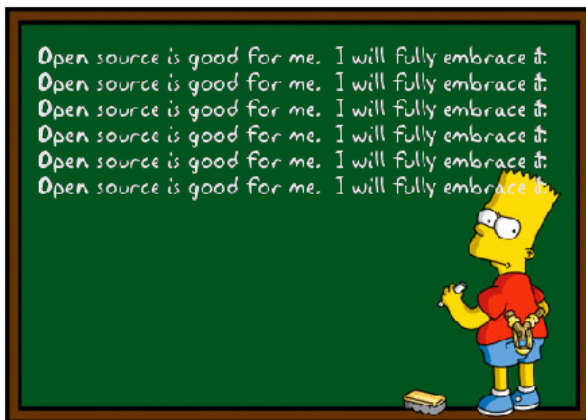
- The approach to licensing the software. Open Source is not freeware, shareware or unlicensed - it is just licensed in a different way to traditional commercial software
- Open Source is also a development methodology which uses a community approach to developing software, based around peer review. Since the code is openly published, everyone can see whether it is good or bad code - and offer feedback on how to improve it.
- Open Source is all about open community - not just for developers, but for users and partners as well.

Projects such as Linux, Apache and Eclipse offer a level playing field where anyone can participate, based on merit

Note that Open source Software tends to need a 'critical mass' of community to help drive and develop it on an ongoing basis, so adoption of latest ideas and thinking is crucial to breakthrough of new code

<p>1999-2001 </p> <ol style="list-style-type: none"> <li>1. Forms Linux Technology Center</li> <li>2. Leads Apache Xerxes, Xalan, SOAP</li> <li>3. Strategic participation in Mozilla</li> <li>4. Founding member of OSDL</li> <li>5. Founder of <a href="#">Eclipse.org</a> &amp; Eclipse Consortium</li> </ol>	<p>2002-2003 </p> <ol style="list-style-type: none"> <li>1. Linux contributions to scalability (8-way+) &amp; reliability</li> <li>2. Leads various Apache projects including Web Services</li> <li>3. Leads various Eclipse projects</li> <li>4. <a href="#">Globus</a> Toolkit for OG SA, OGS!</li> </ol>
<p>2004-2005 </p> <ol style="list-style-type: none"> <li>1. Achieve EAL4 security with Novel / SUSE</li> <li>2. Contributes UML2, Voice Tools, <a href="#">Apertis</a>, Ajax Tools to Eclipse</li> <li>3. <a href="#">Globus</a> Toolkit 4 is WS-I compliant</li> <li>4. Pledged 500 patents to open source</li> <li>5. Contributes Derby DB to Apache</li> </ol>	<p>2006-2007 </p> <ol style="list-style-type: none"> <li>1. Donates accessibility code to Firefox</li> <li>2. Founding member of Eclipse <a href="#">Apertis</a></li> <li>3. Leads Open AJAX initiative</li> <li>4. Donates security code to Eclipse</li> <li>5. Donates medical record management to Eclipse OHF</li> <li>6. Joins OpenOffice.org</li> </ol>
<p>2008 - 2013 </p> <ol style="list-style-type: none"> <li>1. Collaborate with Oracle through <a href="#">Open JDK</a></li> <li>2. Open sources Translation Memory Software</li> <li>3. Research software as open source to make mobile devices more accessible</li> <li>4. \$100m investment in big data, with <a href="#">hadoop</a> as the 'cornerstone of IBM's big data strategy'</li> <li>5. Announces active support for <a href="#">OpenOffice</a></li> <li>6. Launched an <a href="#">OpenStack</a> for Cloud, and supported the <a href="#">Open Cloud Manifesto</a></li> <li>7. Release Eclipse EGL Web Developer Tools (EVDIT)</li> </ol>	

IBM and OSS



## 4. Open data

More than 6,000 data sets already available through [data.gov.uk](http://data.gov.uk)

### Definition from Govt paper “Making Open Data Real:A Public Consultation” (2011)

- Data which can be freely used, re-used and redistributed by anyone.<sup>1</sup>
- In relation to public services, Open Data means data available under the terms of the Open Government Licence.<sup>2</sup>
- The presumption is that data about public services will be Open Data. It may be that some data held in relation to public services is made available, but is charged for.

However there are many challenges facing the public sector to achieve the goals of truly open data -the next slide suggest just a few ..

<sup>1</sup> <http://www.opendefinition.org/government/>

<sup>2</sup> The Open Government Licence is a simple set of terms and conditions to enable the free re-use of government and public sector information, see <http://www.nationalarchives.gov.uk/doc/open-government-licence/> . For organisations which are not public bodies, there is the Creative Commons By Attribution or other recognised Open Licence.

## 4. Open data (2)



Just three of the challenges to effectively deploy open data could be ?:

For example (contentious I know!)

- 1) The charging and funding model for making data available
- 2) Governance to assure that published data is of a quality that is fit for purpose and adheres to standards
- 3) Security and privacy considerations

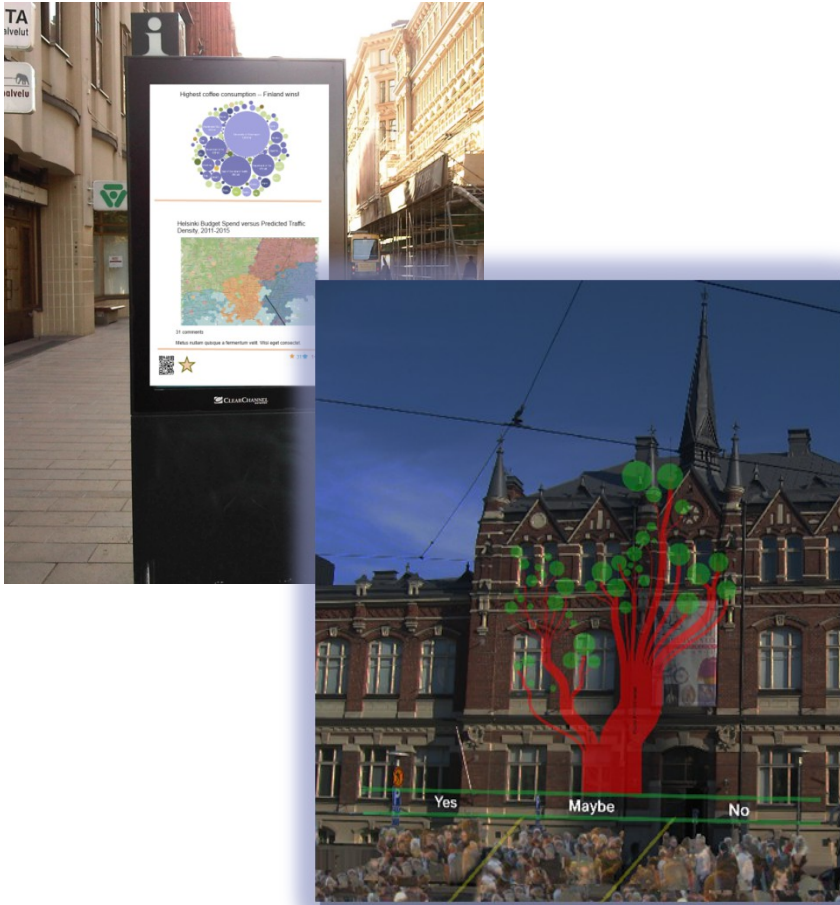
- All new systems and processes are designed and costed with the ability to provide Open Data. For pre-existing systems, some areas of Open Data could be the subject of legislation requiring that changes are retro-fitted
- Governance processes - what new processes (if any) need to be put in place? - How will review and escalation of exceptions be managed? What strengthening and adoption of data standards will be necessary – must be truly ubiquitous across the country to gain maximum benefits
- Wider access to government data widens access to electronic attack. Systems will need to be protected from distributed denial of service attacks - should be separate from systems which sustain departmental operations and hold personal and other sensitive data?

Managing individual privacy concerns AND ensuring aggregated data does not unintentionally offer insight into individuals details – balancing Freedom of Information (FOI) with privacy could become a large issue.



# Example of open data creating change: Helsinki

## *The IBM Smarter City Challenge*



Examples of design sketches which were produced as part of the vision for visualization based on open data

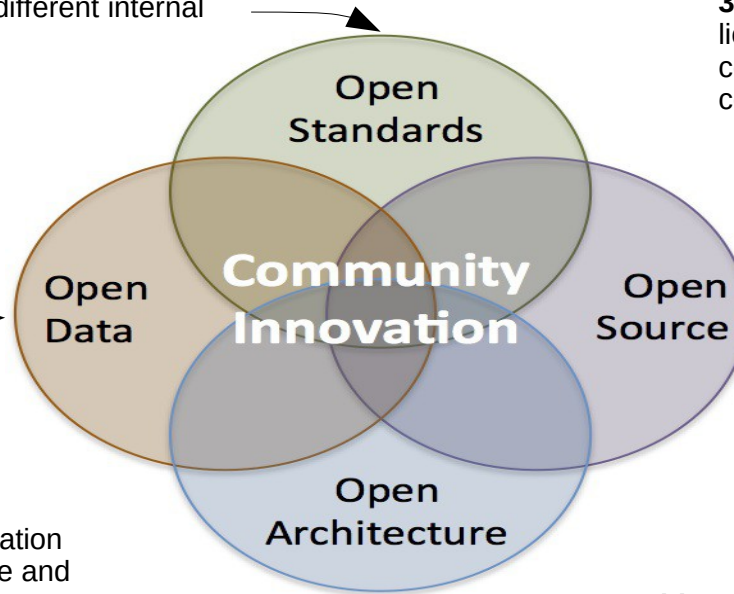
- Addressed the challenge of making digital data from the city's open data initiative accessible and useful to citizens by engaging visualizations to support the World Design Capital event in Helsinki in 2012.
- In 3 weeks, a set of recommendations were made to City Mayor & stakeholders for:
  - Defining a vision for the future based on citizen engagement through visualization of open data
    - Defining the components necessary to grow a sustainable, repeatable platform, process and ecosystem to leverage the principles of open data, and turn data into information, into action and into change.

[http://www.ibm.com/fi/ibm/wdc2012/pdf/IBM\\_SCC\\_Helsinki\\_\\_English.pdf](http://www.ibm.com/fi/ibm/wdc2012/pdf/IBM_SCC_Helsinki__English.pdf)

Open covers ALL these areas – note that many of these have been adopted by proponents of flexible, service oriented systems for a number of years

**2. Open Standards** promote interoperability and information integration by using open, published specifications for APIs, protocols and data and file formats, so you can simplify data sharing between different internal and external business systems.

**3. Open Source** Software promotes licensing standards and leverages community development and collaborative innovation.



**1. Open architecture** enables the building of loosely coupled and reconfigurable solutions, so you have the independence to isolate and distribute work to the most effective teams within and outside the organization. And, it also makes it easier to integrate activities into common workflows that increase collaboration within and among all teams involved in the extended the business process.

**4. Open Data** is the idea that certain information should be freely available to everyone to use and republish as they wish, without restrictions or mechanisms of control.

**By enabling these open principles it allows communities to be fostered and innovation across those communities to begin**

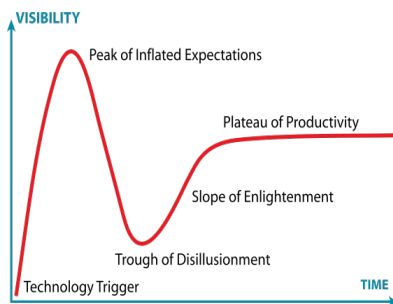
And finally .....

There are many viewpoints to discover around this topic – here are a few from Gartner

Gartner have deep expertise in the debate around 'Open', developed over many years, these two recent quotes from their lead analysts set the tone for a balanced discussion perfectly:

1. "Public procurement should always be about value for money and not about mandated solutions. Open source is one example, but the same applies to mandates requiring cloud to be the preferred sourcing approach, or even proposing a single vendor, as may happen with shared services." [DeMaio, Sep 12] <sup>1</sup>

2. "By 2016, mainstream IT organizations will leverage non-trivial elements of open-source software (directly or indirectly) in mission-critical IT solutions. IT leaders must clearly understand the reasons for OSS adoption to clearly differentiate between real-world versus overhyped expectations". [Mark Driver, Sep 12] <sup>2</sup>



As with all IS / IM/ IT solutions –  
balance the hype with reality !



(1) "When Government IT Mandates Can Be Counterproductive"; Gartner - DeMaio (27th Sep 12)

(2) Drivers and Incentives for the Wide Adoption of Open-Source Software - Gartner (G00239202) - Mark Driver (13 Sep 12)



# This Balancing Act has Reflected in Many Industries – for example:

## OPTIMISATION



Reduce cost & minimize Risk

## INNOVATION



Add Business Value - Quickly



Massive data volume driving unaffordable storage admin costs

E-Commerce



Using workload attributes to determine the optimal place to run new workload requests

Healthcare



New Solutions to Engage consumers leveraging Mobile Devices & Social Analytics

Retail



New solutions to 'get closer to customers' and address millennial generation

Insurance

# An Open Cloud Architecture is emerging ... built on Open Technologies



BUT many issues still exist – differing standards that define interfaces limiting interoperability, data standards that complicate movement / sharing of data around the organisation and beyond, and open source software.

Lets just touch upon these to day to round out the 'open' debate...