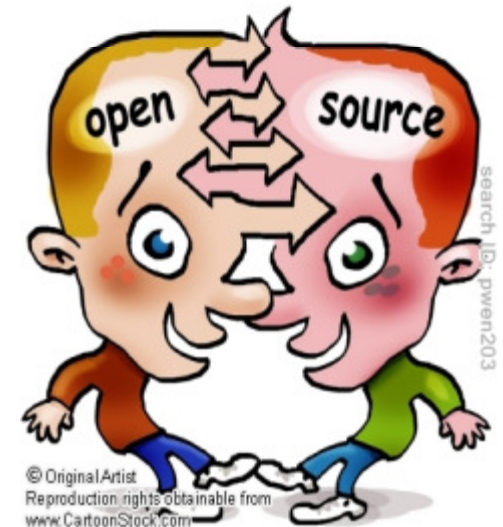




Open Source Software Stack & Standards - Integration And Geographic Information For Everyone.

By: Anthony Tuffour BSc, MSc
GIS Technical Manager
London Borough of Hackney

Date:21/09/2011





Outline

- The Concept of Open Source Software.
- Motivations for the Interests and Contributions to OSS.
- Open Source Software Policy at London Borough of Hackney.
- Open Standards.
- Implementation of OSS in Hackney.
- Criteria for Selecting OSS Stack.
- Benefits Realised.
- Challenges Faced.
- Future Direction.
- Conclusion.





London Borough of Hackney

- One of Inner London Boroughs situated in East London.
- Has a workforce of about 4,000 that caters to a population of 220,000.
- One of the most improved boroughs.





The Concept of Open Source Software



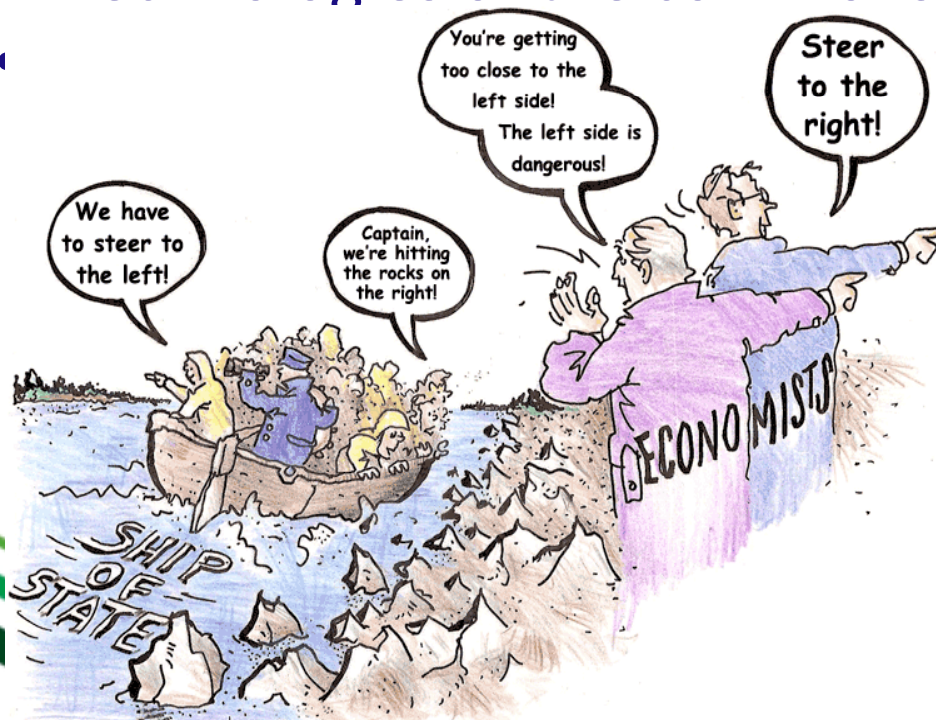
“OSS is a term for software published under licenses that do not give any private intellectual property rights to the developers” (Osterloh & Rota, 2007). Contributions to the development process are made by enthusiastic volunteers, non-paid members of the OSS community investing their free time and private resources for a common good in software development.

Underpinning Theory is Innovation model: “Private – Collective model”



The Concept of Open Source

- The generosity of the masses:
 - there are still good people out there.
- Technologies of the commons.



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license)



Credit cards, ID, cash. All still there.
It was discouraging to know there are
still good people out there.



Motivation for Interests & Contributions to OSS

- Increased user satisfaction with innovation
- Benefits that accrue to an organisation such as London Borough of Hackney
- Competitive dynamics
- Reputation motives
- Enjoyment
- Pro-social motives



Job satisfaction comes from doing what you enjoy, without the boss finding out.

Too Much Coffee Man

BY SHANNON WHEELER



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www.tmm.com



Open Source Policy at LBH

The Council's policy is to “buy-not-make business applications as this allows it to focus on its core business and take advantage of the economies of scale that buying from the marketplace brings with it” (London Borough of Hackney, 2006).



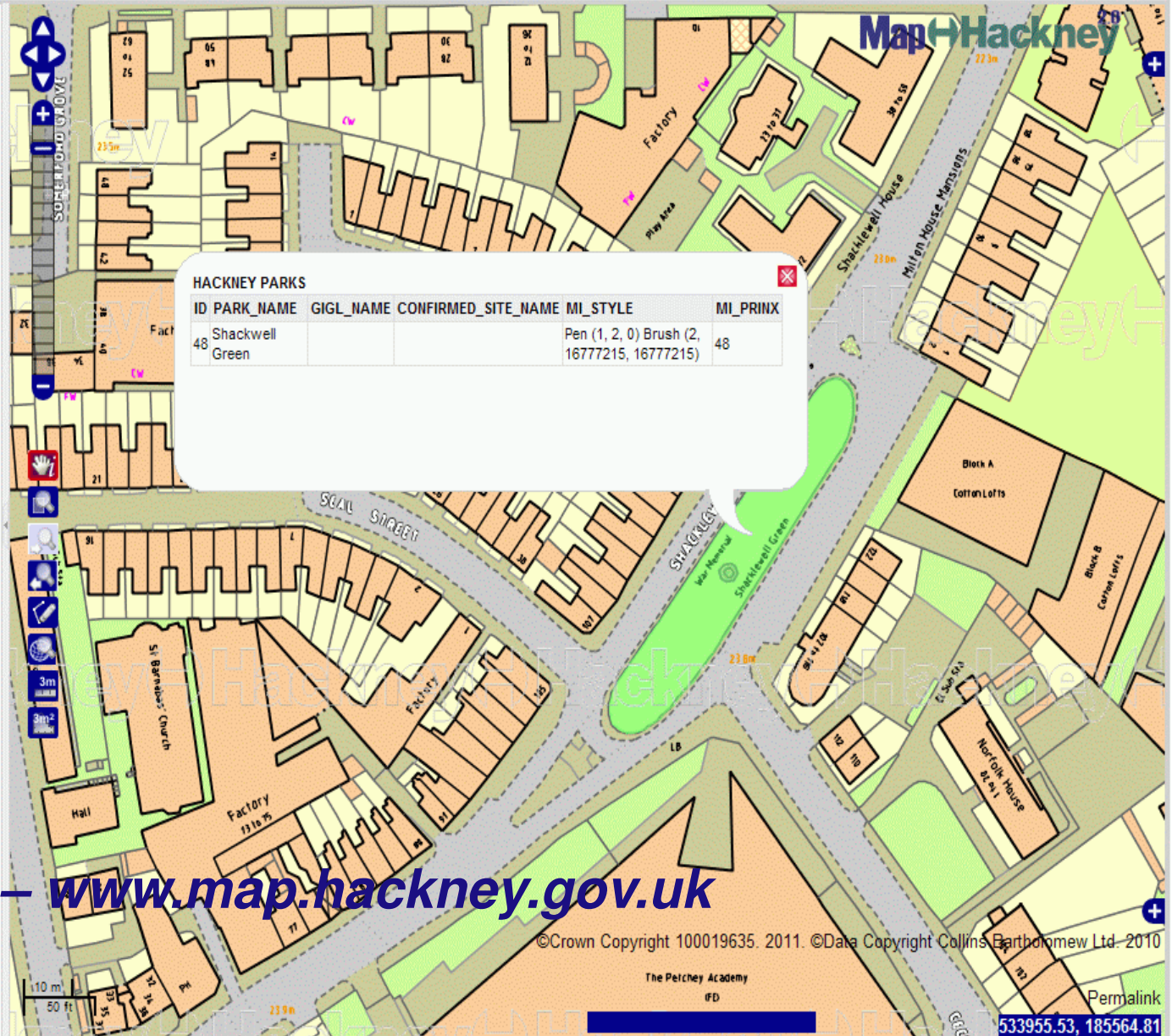
According to company rules there can be no:

- * Bug report
- * Patch
- * Creativity
- * Change

Now run along.

Layers

- Hackney Map Layers
 - Baselayer
 - Overlays
 - Hackney Parks
 - LBH Wards
 - LBH Housing Neighbourhoods
 - Water Regions
 - Community and Living
 - Council and Democracy
 - Education and Learning
 - Environment and Planning
 - Health and Social Care
 - Leisure and Culture
 - Transport and Streets



Map.Hackney2.0 – www.map.hackney.gov.uk



Map.Hackeny2.0 - Why Open Source?

- Problems with the then existing web map application such as;
 - Support issues.
 - Product development and catching up with the latest technology.
 - Software stability and reliability.
 - Integration and Interoperability.
 - Use of a plug-in to display a map.
 - Controlled by a single organisation who would decide what upgrades are done, when they are done and when they are released.
- Costs and flexibility.
- Implementation of current web map technologies – tiling and caching of map files.





Implementation of OSS Stack at Hackney



GeoExt



GeoServer



OpenLayers



Apache
SOFTWARE FOUNDATION

Ext JS



GeoWebCache



OGC
Making Location Count

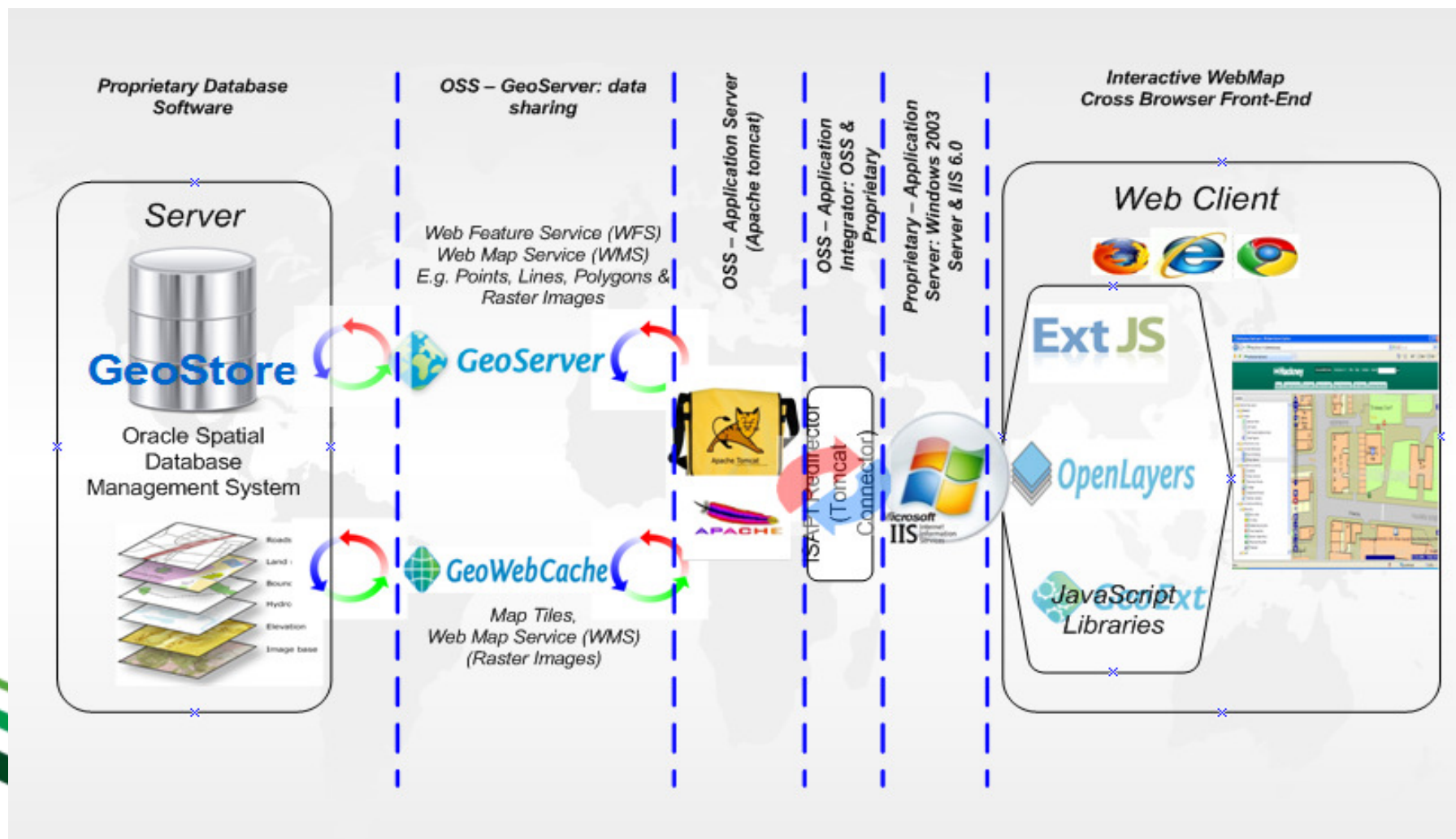


open source
initiative



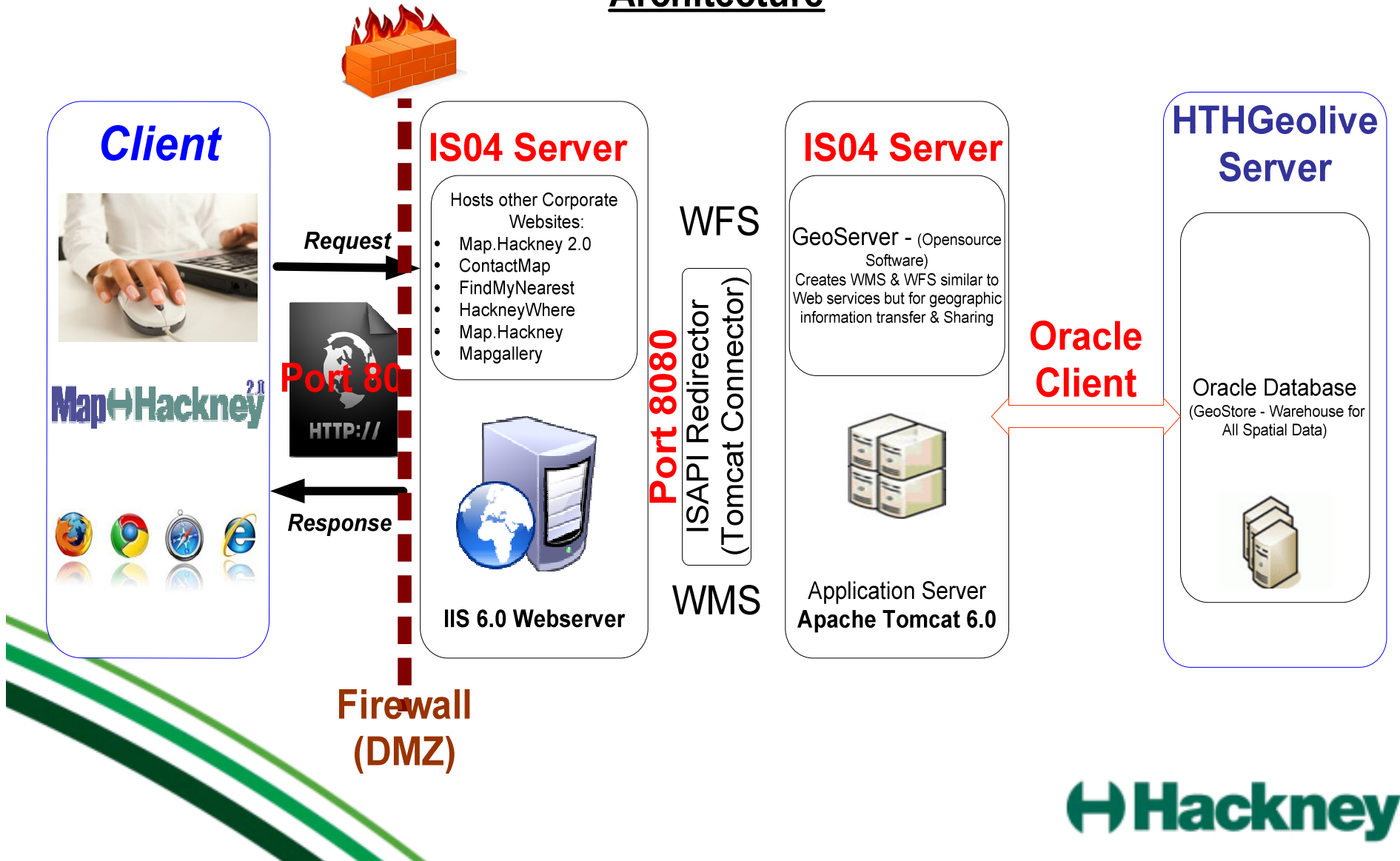


Map.Hackney2.0 OSS Stack Architecture





Map.Hackney 2.0: IIS 6.0 & Tomcat ISAPI Redirector Integration Architecture





Open Standards

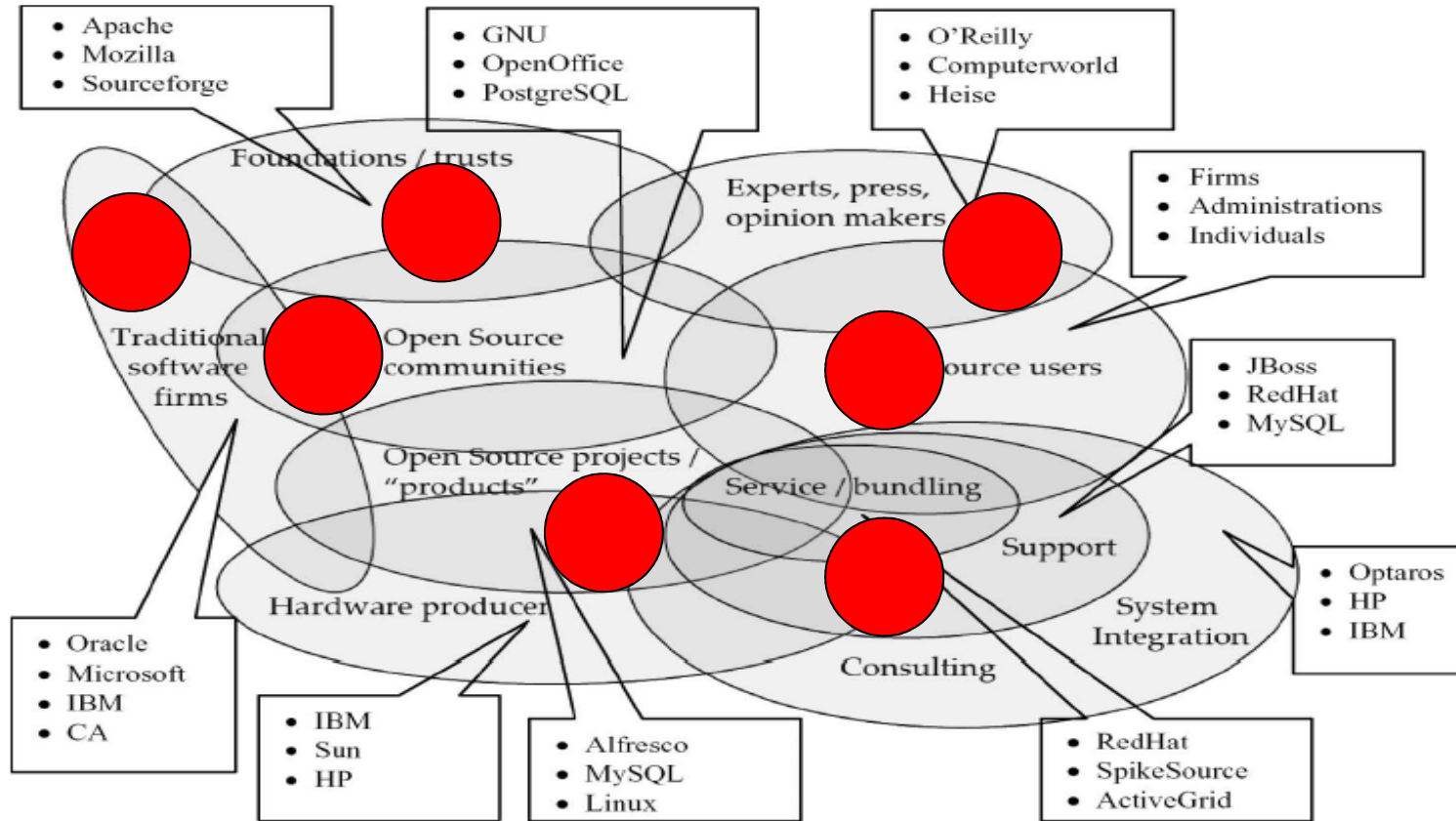
- OGC, 2011 states that “when standards are implemented in products or online services by two different software engineers working independently, the resulting components plug and play”.
- Most of the OSS stack used in Map.Hackney 2.0 embraces the open standards and specifications developed by OGC.



Flickr: 4_EveR_Young



OSS Ecosystem



Kuelnel, (2008).



Criteria for Selecting The OSS Stack

- Support – Key to successful implementation.
- Vibrancy of online discussion forums.
- Case studies analysis and active involvement.
- Presence of umbrella organisations.
- Contribution and support by organisations and commercial companies.
- Integration with existing proprietary software.





Benefits Realised

- Organisational Benefits:
 - Financial Savings - annual savings on maintenance and support cost of about £3,000.
 - Savings on Investment in new web mapping application from a commercial vendor (about £20,000)
 - No software license locked down and lengthy procurement processes.
- Technological Benefits
 - Inherent flexibility and interoperability that ensures integration with existing systems and applications. E.g. Find-My-Nearest, Oracle Database, MS IIS etc.
 - Very stable and reliable application: longevity and predictability.
- Other Benefits
 - Support & Accountability - vibrant community of developers and users with support from industry leaders such as Google, Ordnance Survey.
 - Auditability – many users and developers are able to review what the software offers.
 - Well organised umbrella organisation charting the development path.





Challenges Faced

- No ICT strategy on OSS adoption and implementation as a cost effective alternative.
- Issue of support (double edged sword).
- Over-reliant on maintenance contracts.
- Inadequate understanding and limited experience from IT support service.
- Limitations on the amount of documentation available for OSS.





The Future Direction of OSS In Hackney

- Data Sharing through data sharing protocols such as WFS & WMS.
- Metadata Application using OSS as in GeoNetWork and GeoNode.



GeoServer

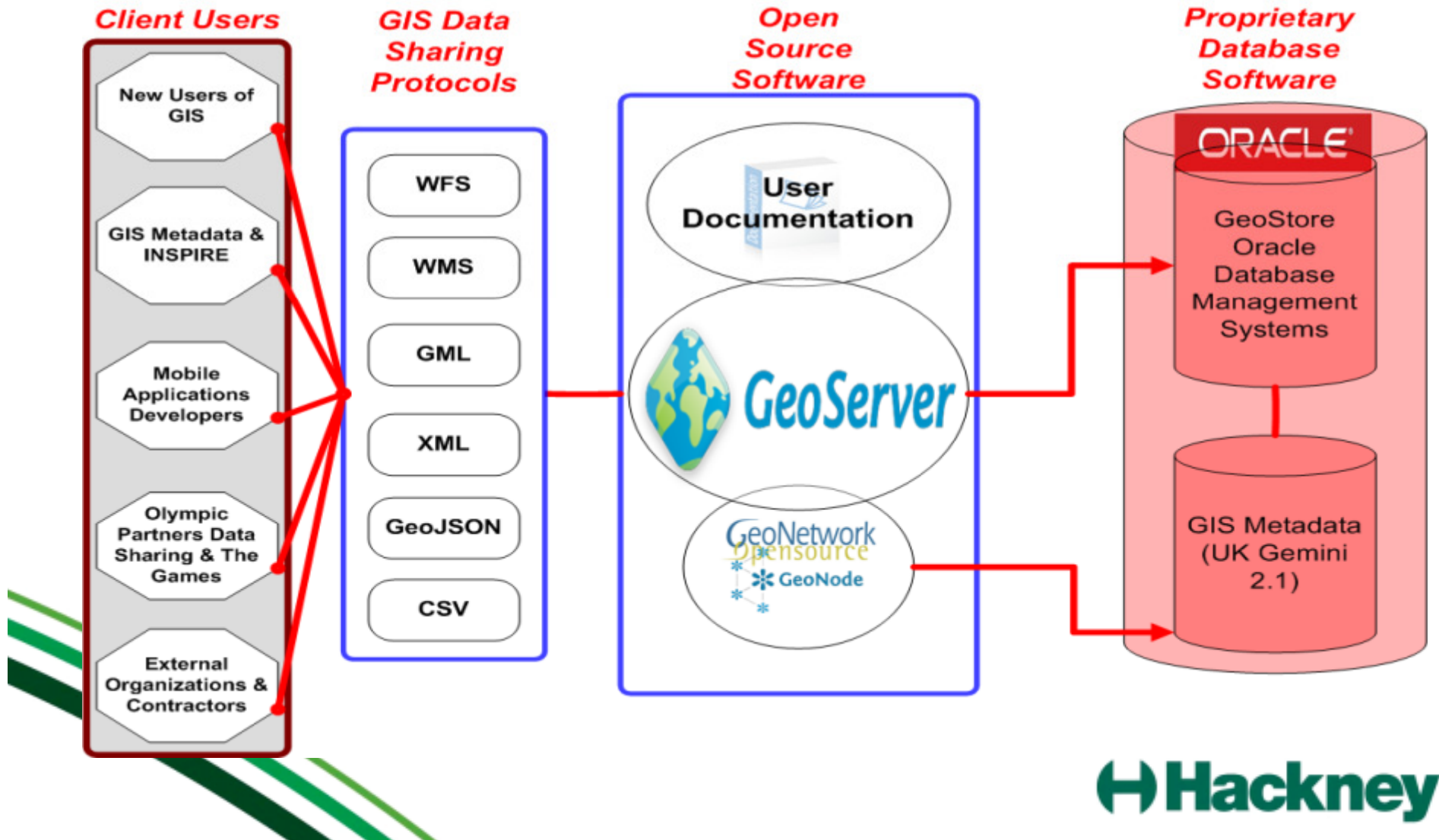


GeoNode

Hackney



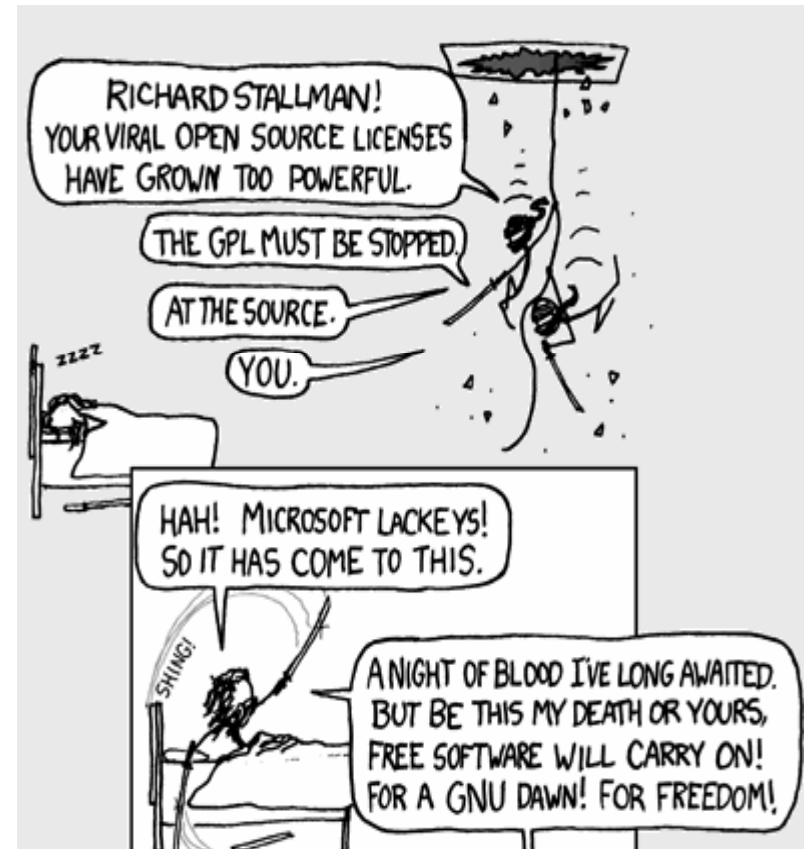
The Future Direction of OSS In Hackney





Conclusion

- OSS is gradually becoming the mainstream software that offers free competition to commercial versions.
- Is used and will grow to drive business processes and offer greater integration with commercial applications.
- Sometimes no single OSS product can be used to solve a business problem.
- OSS is versatile, interoperable, reliable, use current technologies and have come to stay.





Thank You and Any Questions



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- Kuelnel, A.-K., 2008. Microsoft, Open Source and the software ecosystem: of predators and prey—the leopard can change its spots. *Journal of Information Communication Technology Law*, 17(2), pp.107-24.
- London Borough of Hackney, 2006. ICT-review-0607 Review of ICT. Report of Governance and Resources Scrutiny Commission. London: London Borough of Hackney.