

# ‘Platforming’ Open Source

Implementing Open  
Source the Right Way  
through “Platforming”

Implementing Open Source the  
Right Way through “Platforming”





## Abstract

Open Source ecosystem comprises of hundreds of open source projects, frameworks and technologies. Organizations worldwide are excited by the possibilities of open source but often find it hard to implement open source in a broad based standardized manner to solve critical business needs.

To solve business problems often organizations find themselves selecting one or the other open source technologies but that still falls short of the need to provide a long term IT solution. Moreover, as the business landscape changes Businesses need assurance from open source to scale and meet cross cutting needs.

To implement open source the right way open source itself requires integration with other open source software. For e.g. Enterprise automation or service provision to internal and external customers requires intersecting use cases in content management, business intelligence, collaboration, CRM, ERP, and business workflows.

“Platforming” open source is one of the ways through which leading open source technologies can be selected, architected, and then pre-integrated as software platforms that make the task of standardization of open source easier.

This white paper provides insight into how “Platforming” can be used to implement Open source and also shares our experience of successfully creating pre-integration platforms that provide alternative solutions to proprietary implementations.



## Open Source against Open Source – Why getting the right solution is difficult?

Businesses need open source and Open source needs businesses.

However Open source products and technologies today represent an incredibly wide set of choices in areas such as operating systems, content management, enterprise portals, social networking, document management, business intelligence and several other fields of interest to businesses.

*“Open Source competes not only with proprietary alternatives but with open source alternatives. Is it then possible to have a broad IT strategy based around Open Source?”*

### Choices lead to Confusion

With the availability of abundant open source choices businesses find themselves staring at following questions:

- ❖ Which open source component(s) meets requirement?
- ❖ Are we making the right investment?
- ❖ In the next 3 years time what will happen to this investment and how will the open source technology scale?
- ❖ For cross cutting business needs (e.g content management and business reporting with some ERP features) what is the best way to pick as many open source technologies and somehow bring them together?
- ❖ Where to get the right support and system integration partner?
- ❖ Is an integrated solution possible?

All these questions in most cases stop businesses from making an Open source choice because either an alternative open source choice also exists or the chosen open source product does not meet the full capability set. Often decisions are made for a particular open source community or commercial software and a customization partner assembles the open source in an ad hoc manner to deliver the project deadline.

This approach is both short term and short sighted. It is vital therefore for businesses to think about Open source as any other technology.



## Why Platforming?

Software industry is growing at an amazing speed and churning out software products one after the other. However it is also becoming clearer that organizations need to think of their IT strategy as “Platforms” since products come and go but having a “Platform” at the centre of business operations within a particular domain (such as content management or business intelligence) will help faster development of services. Moreover the value of IT is shifting increasingly towards services and solutions instead of the core product technology.

### Open Source Angle

Open Source has come at the right time for businesses and provide a wide variety of “Product” choices. Like Microsoft or Oracle it has lacked a central ecosystem owned by a proprietary company and is therefore provides value in the form of scattered open source components that match the proprietary products piece to piece.

In summary the open source movement has not witnessed similar “Platform” development and standardization of open source components and technologies as witnessed in Microsoft, Google or Apple platforms. This however does not mean that such initiatives do not exist.

Today as Open source becomes main stream, in its own way the Open source industry is also moving towards standardization around open standards and core frameworks. For e.g

- ❖ Open source JCR (Java Content Repositories) has emerged from the open source movement as a platform for creation of dynamic knowledge repositories.
- ❖ Android as a mobile operating system is fast becoming an open source standard for mobile application development.

This provides significant opportunity for businesses to adopt open source in the right manner through bringing together open source components using “Platforming” approach. Platforming helps implement standardized open source components together to form larger platforms and often provide greater business value in terms of:

- ❖ Service Oriented Architectures
- ❖ Software as a Service Platforms
- ❖ Specialized platforms for vertical services (search, knowledge management, reporting, analytics, Web)



## Defining Platforming

Platforming" Open source is akin to creation of an open source eco system within a business domain leading to a launch pad for new services exposed to customers, employees, or associates.

With Platforming of open source it is possible to implement open source more aligned to the business goals instead of driven as a technology project. Using the right system integrator partner that understands Platforming it is possible to bring together open source components in such a way that innovative software as a service models are possible within the enterprises. In particular service providers (for e.g. SaaS service providers, Cloud service providers) benefit greatly from this approach.

Platforming can also be understood in comparison to other approaches of implementing Open source software within businesses:

	Open Source customization and Enhancement	Platforming Approach to Open Source
Business Focus	Centered mostly around the open source product features and programming changes	Centered around Open source architecture that the open source product(s) represents and leverages the technical standards more than the functional features; Often uses the technical architecture to deliver solutions instead of feature customizations
Core Characteristics	<p>Leads to a product or a service</p> <p>The implementation is often treated as a distinctive "silo" product within the business.</p>	<p>An Open source platform is not a product; Not a service; But a launchpad for new solutions and services exposed to the rest of the enterprise.</p> <p>It is a collection of the common elements, especially the underlying core technology implemented across a range of open source technologies.</p> <p>An Open Source Platform is a basic trade-off between distinctiveness and commonality (common services needed to solve multiple problems)</p>

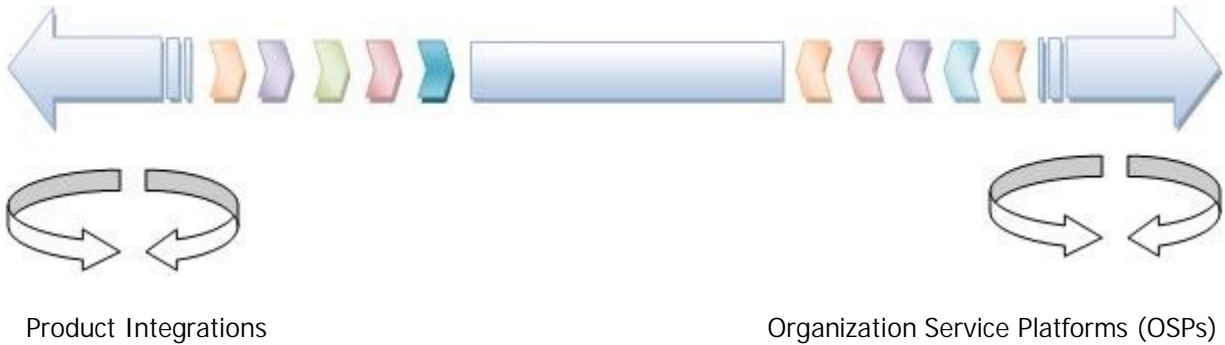


Objectives	Often the objectives are narrow and focused on the immediate business problem for e.g. reporting or collaboration.	The objectives are broader and need for reducing total cost of ownership (TCO), time to market (TTM), and increasing ROI)
Implementation Approach	Often the implementation revolves around the installation and deployment of an open source product alone and further customization of its features.	Often multiple open source technologies and product come together to deliver the platform for generating new services  Implementation and deployment revolves around the assembled platform of Open source components; QA and performance testing become priority.
Quality Assurance	Often the QA is either negligent or simply dependent on the underlying commercial open source product QA done by the vendor.	Quality Assurance needs for Open Source Platforming is based on creating business domain test assets once, and utilize them multiple times. This methodology enables organizations to create custom-built core platform on top of existing infrastructure.
Architecture	Often web based architecture with single or multiple server installations and accessed via a browser	Multi Tenant SaaS enabled architectures are attempted in Platforming keeping in mind diverse set of services that can be exposed.  Open Standards such as REST, XML and hiding complexity of the underlying open source product functionality is a key factor in a Platform Architecture on open source.



## The Platforming Spectrum

Platforming is an approach to implement Open source effectively and can be applied as a spectrum ranging from simple open source product implementations as well as larger mission critical platforms built on Open source.



As shown in the spectrum above the Platforming can be applied to discreet Open source product integrations such as in case of Content Management, Reporting solutions, Enterprise Portals or Collaborative Community platforms, ERP systems or CRM implementations.

## Vertical Platforming

Often Vertical Platforms are implemented around Product Integrations.

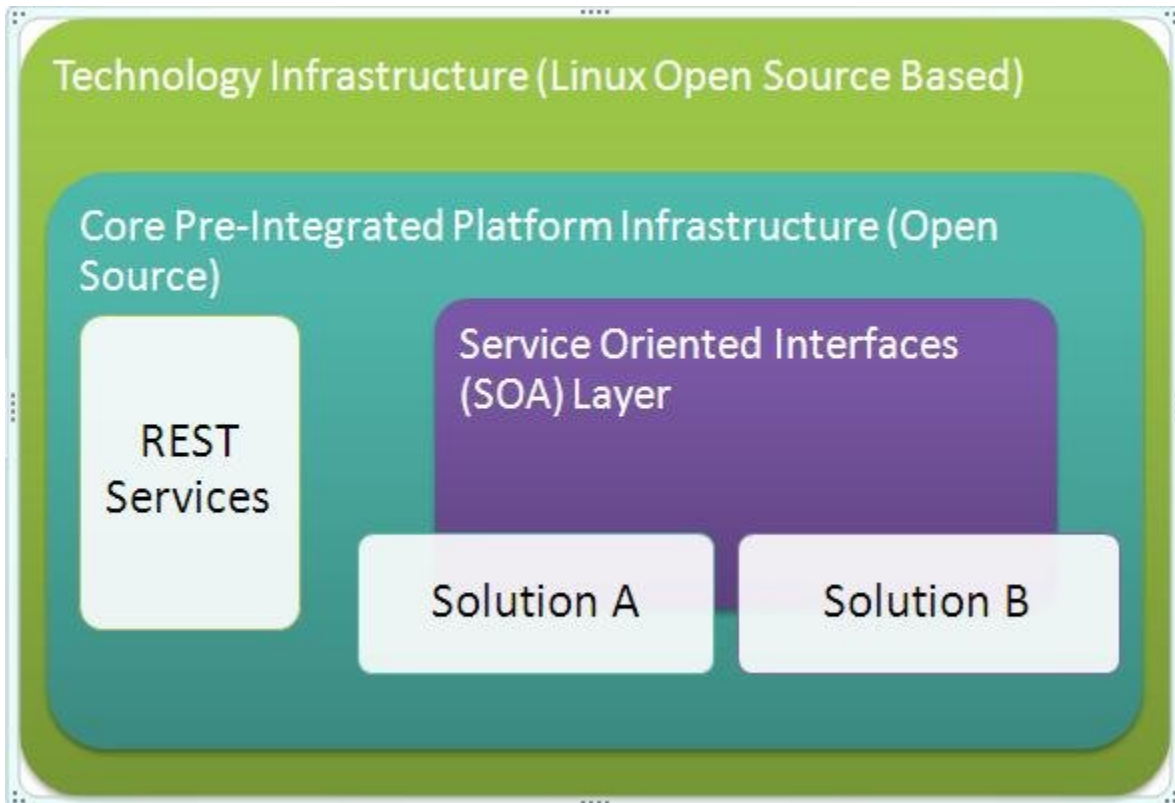
This involves "Vertical Platforming" where the Platform created is based on a single Open source Product but has been further enhanced to create a platform that meets various needs within the service domain. For e.g. an Alfresco based implementation has vertical integration of Enterprise semantic search, REST based services framework, Web content management, Integration with scanning software (possibly proprietary) to achieve an Enterprise Content Management Platform.

Similarly a Business Intelligence implementation may center around a commercial open source product such as Pentaho or Jasper soft but would require vertical integration of Data visualization software, Portal open source products and ETL data integration to build a Business Intelligence platform focused towards a particular business need (For example Executive Dashboards)



## Horizontal Platforming (Organizational Specific Platforms)

Similarly on the other end of the spectrum are Organizational Service Platforms (OSPs) geared for Service Providers interesting in implementing open source based Cloud services or SaaS (Software as a Service) delivery models. This can also be termed as Horizontal Platforming where multiple open source components are assembled, integrated and with a platform architecture represented in the form of SaaS based services.



The Vertical approach is more centered towards small and medium enterprises while a Horizontal OSP Platform approach using open source is more aligned to larger mission critical platforms as required by Service Providers or larger organizations aiming to build OSPs using Open source technologies.



# How Enterprises and Service Providers benefit from Platforming Open Source?

Organizations embracing open source with investments in right open source technologies can benefit greatly. These benefits come in the form of better product integrations around a central open source product (Vertical Platforming) and Organizational Service Platforms (OSPs) around multiple open source technologies integrated together.

Compared to typical open source implementations and customizations these are:

	Open Source customization and Enhancement	Platforming Approach to Open Source Benefits
Delivering Extended Value	<p>Open source customization and enhancement implementations are often limited by what the open source product has to offer and are implemented with a fixed methodology around the commercial open source product in mind. This results in:</p> <ol style="list-style-type: none"> <li>1. Limited value restricted by only the open source product features</li> <li>2. Half baked integrations that are difficult to extend and are often reworked</li> </ol>	<p>Platforming brings maturity to the entire implementation and drives innovative integrations around the product.</p>
Total Cost of Ownership	<p>While an open source product customization also helps implement latest open source technologies at fraction of cost often the speed of implementation compromises the total cost of ownership</p> <p>The implementation is often treated as a distinctive "silo" product within the business.</p>	<p>Platforming open source implements a much better TCO of the solution implemented since its often led by a long term architectural focus instead of a specific open source product implementation focus.</p> <p>This acts as a insurance policy against a fast changing technology landscape.</p>



<p>Time to Market</p>	<p>Rapid but with limited features centered around the main open source product;</p> <p>Fewer differentiating features.</p> <p>Mostly the solution does not engage full set of users from the start and often remains in a pilot stage.</p>	<p>Rapid time to market with fuller product features.</p> <p>In most cases, full adoption</p>
<p>End User Experience</p>	<p>End user experience in case of Open source product customization is limited to the user experience provided by the singular open source product user interfaces.</p>	<p>In case of platform often the end user experience is not limited to the user experience of one particular open source product but is created "Outside In" and significant changes are required as per the end customer.</p> <p>Mostly this experience is developed from scratch with new data and user interface visualizations.</p>
<p>True Innovation</p>	<p>Open source product customization is not necessarily innovative. Use of a open source product does provide cost benefits but does not always translate into Open source innovation.</p>	<p>Platforming itself is an innovation exercise with architecture improvements and clever use of open standards.</p> <p>These open standards come together to provide the right architecture built using open source technologies.</p> <p>In turn this provides an innovative way of solving problems.</p>



## Open Source Platforming in Action



## Open Source Platform for Knowledge Management

fusionKM is a Knowledge Management platform – using the platform organizations can quickly establish internal KM solution and develop their internal business process and taxonomy.

The platform is offered as an in-premise SaaS model. The whole stack is maintained and managed by InfoAxon.

### Solution Highlights

#### Service Oriented Architecture (SOA)

The solution is designed and architected in Service Oriented Architecture (SOA), making it fully extensible and integrated with organizations internal and legacy systems.

#### Repository as Service

The full knowledge repository can be exposed as REST based HTTP services, making the solution ready to serve as knowledge provider to other systems.

#### Business Process

The integrated business process engine can be configured to implement any workflow processes of any industry or organization. It has integrated modules for Reporting, Timesheet, Project Management, Task Management, Escalation etc.

#### Portal

Full featured JSR complaint portal framework with lots of built in applications such as Wiki, Blog, Discussion Forum, Calendar, Theme, Web CMS, Document Management, Private Messaging etc.

#### CMIS

CMIS complaint platform enabling interoperability between other Enterprise Content Management Systems.





## Protocols

A number of industry standard protocols such as WebDAV, IMAP, CIFS, FTP etc are supported in fusionKM making the platform pluggable to other complaint systems.

## Intranet ready

fusionKM is a fitting solution for organization wide Intranet setups with multiple branches, departments and geographically distributed.

## Mesh Ups

fusionKM has built in applications to integrate with several other popular information and knowledge sources; such as Bing, Youtube, Flickr, Delicious, Wikipedia etc.

## Open Platform

No limit in number of users and knowledge content size and space.

## Benefits

### For Users

1. Reduces time required to complete knowledge intensive work
2. Increases "trust level" in information accuracy and timeliness
3. Eases burden on subject "experts" since users can get answers and guidance to their questions on a self-serve basis

### For Administrators

1. Minimal resources required for ongoing maintenance as many tasks can be scheduled for automatic rule based execution
2. Security inherited from content source, so administrators do not have to worry about unauthorized users gaining access to sensitive information
3. Comprehensive toolkit for building, supervising and managing the Enterprise Portal

## The Technology

1. Liferay® Portal
2. Alfresco® ECMS
3. Open Office
4. JBPM
5. JQuery, YUI
6. Lucene
7. MySQL
8. Apache Tomcat

## Features

1. Friends
2. Communities/Groups
3. Sub-Organizations/Locations
4. Integrated Search engine
5. Graphical Representation of Knowledge/Network
6. Contextualized Search
7. Tagging/Tag Cloud
8. Public, Private contents
9. Portal Framework
10. Wikis
11. Blogs
12. Discussion Threads
13. Dynamic Document Metadata
14. Document Check-In/Check-Out, versioning
15. Document Transformation, PDF generation
16. Image Processing, Transformation
17. Automatic/Custom Workflows
18. Private Messaging



### For Organizations

- ❖ Improves ROI of knowledge asset management by reusing information instead of reinventing and searching for it
- ❖ Reduces cost of retaining intellectual capital and transmitting it to new employees or successors
- ❖ Quick and Easy installation and use across the enterprise
- ❖ All resources and knowledge under a single umbrella
- ❖ Flexible licensing and pricing model
- ❖ Based on full Open Source – Full ownership, no vendor lock-in
- ❖ Full featured Corporate Intranet platform

19. *Bookmarking*
20. *Image Gallery*
21. *Related Documents*
22. *Tree-style Folder structure for documents*
23. *Granular and Customizable Permissioning model*
24. *Notifications*
25. *Calendars, Events*
26. *Search by Synonyms*
27. *Dynamic Portal Themes*
28. *Separate Themes and Navigations for groups, locations, communities*
29. *Powerful Web CMS for Portal pages*
30. *Public, Private, Restricted groups*
31. *Saved Searches*
32. *Custom Taxonomies*
33. *User Folksonomy*
34. *JSR Portal framework, Portlets*
35. *Full Text Search*
36. *CIFS document access for Intranet setups*
37. *Templates*
38. *Dedicated, private space for users*



## About InfoAxon Technologies

InfoAxon is a leading provider of enterprise services and business solutions powered by open source. We design, architect and support complete "Enterprise Solution Platforms" using Open Standards, Web 2.0 next generation technologies and Open Source Frameworks providing end-to-end solutions to business problems.

### India's First Global Open Source Integration Company

We are India's First Global Open Source Integration Company providing business solutions in areas of *Content & Knowledge Management*, *Web2.0 Collaboration* and *Business Intelligence* powered by our unique open source 'Platforming' expertise.

#### INDIA OFFICE:

InfoAxon Technologies Ltd.  
H-189, Sector-63,  
Electronic City,  
NODIA-201307, U.P  
India  
Phone: +91 120 4350040,  
Fax: + 91 120 4350065

#### UK OFFICE:

InfoAxon Technologies UK Ltd.  
Building A, Trinity Court,  
Wokingham Road,  
Bracknell, Berkshire RG42 1PL,  
United Kingdom  
Phone: +44 1344 668048,  
Fax: +44 1344 668148