

Unleash the innovation within

™

*A Kyield White Paper*  
*November, 2008*

**Kyield**

## INTRODUCTION

Kyield is a semantic network consisting of a suite of interoperable modules that supports organizations in their quest to improve innovation and productivity within the digital workplace. To realize these important goals, it is first necessary to overcome the significant challenges of information overload and poorly designed architectures that contain disincentives for knowledge workers to innovate. This is important, as the previous architectures do not capture readily achievable opportunity, fail to avoid preventable systemic crises, and encourage the copying of intellectual property<sup>1</sup>. The unique architecture introduces a higher level of work quality to the enterprise by employing automated and semi-automated applications for optimizing knowledge yield within a mission-specific, interoperable, logically designed structure<sup>2</sup>.

“Management 3.0 is about engaging and unleashing people..”  
— Terrence Seamon  
American Management Association

## SEMANTIC EVOLUTION

Organizations have benefited from the ubiquity of the World Wide Web, which initially indexed only unstructured documents (URL). The growth of the unstructured files delivered over the Internet and stored in Web databases greatly exacerbates the problem of information overload, which has been only partially resolved by improved search technologies.

Another significant barrier to networked productivity is the lack of interoperability among various applications. Because most organizations either use multiple productivity suites or work with other organizations that do, universal standards are needed for communications, document creation, management, and storage. The Web's founder Tim Berners Lee and others formed the World Wide Web Consortium (W3C) “to build a consensus around Web technologies,” with a goal to provide standards that enable Web interoperability while improving function. This goal is the central vision for the Semantic Web. The development of the Semantic Web (SW) has been a collaborative evolution led by computer scientists who created semantic languages, including RDF and OWL. Initially deployed primarily by R&D centers and government agencies, commercial vendors of semantic technologies are now selling to a broader spectrum of organizations.

“With less human oversight with the Semantic Web, we are worried about it being easier to be deceptive.”  
— Peter Norvig, Google's Director of Research (2006)

Several notable start-ups are focused on SW search, including [Hakia](#) and [Cognition](#), each taking a much different approach. Oracle recently introduced Spatial 11g; “the industry's first open, scalable, secure and reliable RDF management platform”. The IBM Advanced Technology group is rolling out the Semantic Layered Research Platform “to support semantics throughout the application stack.” Microsoft is investing heavily in related R&D and to aid this effort recently acquired [Powerset](#). Hewlett Packard has a significant SW program, as do Google, Sun Microsystems, and most other major IT companies. Large government contractors have also ramped up SW research with many smaller companies providing a combination of SW products and services; particularly in the development of ontologies.

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- 1 Public examples include the Phoenix Memo in the database of the FBI. In a well designed semantic network this memo may have prevented 9/11. Other examples are Katrina's systemic breakdown, and warnings of sub-prime mortgage risk within the FRB.
  - 2 The Kyield system is patent-pending and available for license: *Modular system for optimizing knowledge yield in the digital workplace*; USPA # 20070250539.

## CHANGING PRIORITIES

The Economist Intelligence Unit recently released [survey results](#) that clearly represent a sea change in priorities. While many IT budgets in recent years targeted investments in legacy maintenance, finance, wireless, and Web 2.0, management is adapting to the quickly changing environment. Senior executives now appear to be recognizing the potential of knowledge systems to improve innovation and productivity.

“60% of survey respondents report a shortfall of ideas in their innovation pipeline.... the greatest barrier in this process include resistance to change, shifting strategic priorities and lack of project ownership.”

— Economist Intelligence Unit  
*The Innovators, How Successful Companies Drive Innovation (2008)*

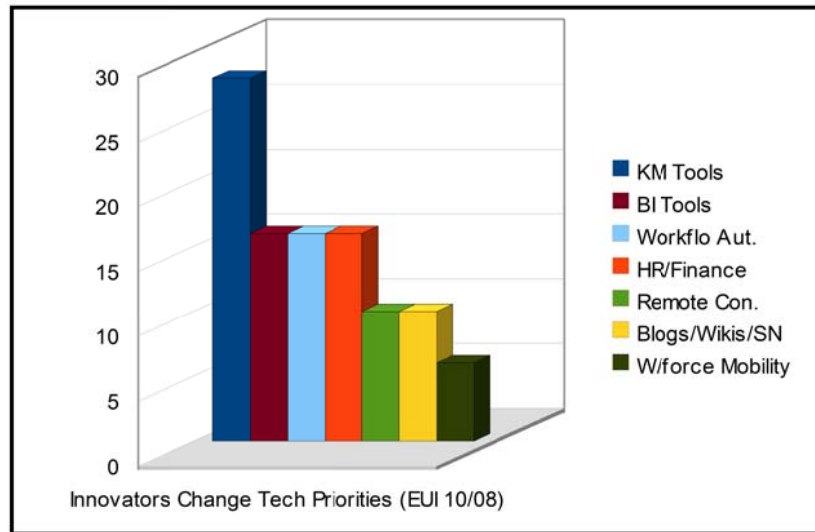


Illustration 1: Global leaders seek improved knowledge systems

## SOA VALUE MODEL

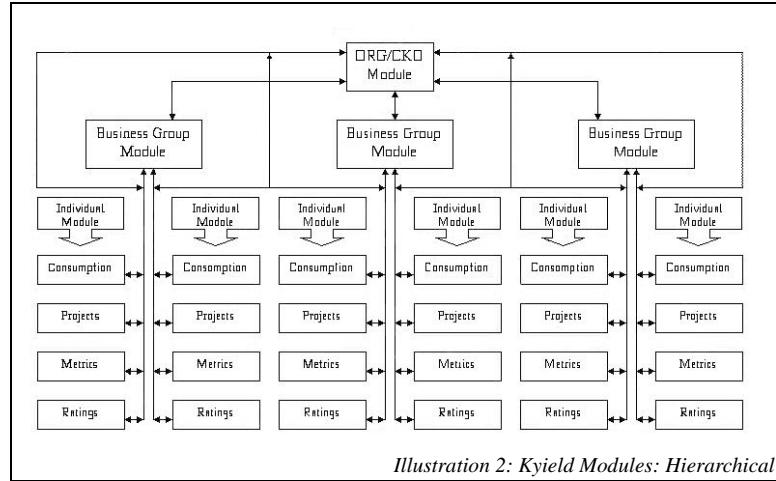
The Kyield architecture is platform agnostic and exceptionally customer centric. The architecture is designed to be as interoperable as possible with existing systems. A few of the benefits of deploying Kyield with semantic technologies include:

- **Value and Accessibility:** Using the Internet and browser interface, all users can access Kyield 24x365.
- **Low Cost of Ownership:** Kyield employs a service oriented architecture (SOA) that eliminates the need to install and maintain client-side software on the desktop.
- **Low Risk:** The Kyield data is stored internally in the centralized corporate servers (UNIX, Linux, or Windows). RDF and OWL models can now be integrated directly into the corporate DBMS, resulting in integrated, scalable, secure, high-performance applications.
- **Security:** Kyield can be easily adopted within the organizations' existing security systems.
- **Scalability:** Oracle users for example can now adopt Kyield in a secure environment scaling tens of thousands of users in a single business unit.
- **Adaptability:** The unique management controls at each level of the organization provide a more agile work environment that allows the knowledge yield curve to be managed, and encourages cultural differentiation. Thought differentiation is a cornerstone of creativity<sup>3</sup>.

<sup>3</sup>"All innovation begins with creative ideas" Amabile et al (1996).

## KYIELD DIFFERENCE: MORE THAN THE SUM OF THE PARTS

“It has been the bane of knowledge system architects that the needs of the individual knowledge worker often conflicts with that of the organization. ...suggests why a piecemeal approach has failed so many in the past .”  
 — *Kyield co-founder Mark Montgomery Navigating the obstacles to knowledge yield (2002).*



Kyield is unlike all other known products. Rather than looking at the problems of information overload, intellectual property, and worker productivity only through the lens of one narrow field, Kyield took a multi-disciplinary approach to R&D. The product suite benefited from the team member's previous experience with two online learning networks as well as an advisory board of thought leaders from SW, computer science, knowledge management, and life sciences, with influence from many other disciplines. One result of this approach was to recognize early on that the various obstacles to achieving higher performance in the work environment shared common identifiable relationships; all of which were deeply interwoven with the Internet, communications, and enterprise software. It was discovered that multiple obstacles could best be overcome within a single holistic architecture; and without which none of the problems can be fully overcome:

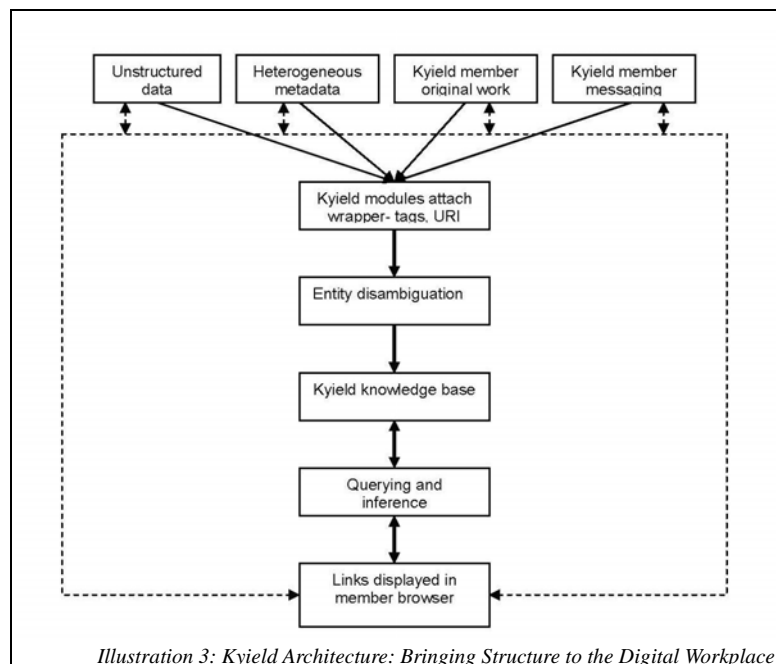
1. If we do not resolve the problem of information overload, then creativity and productivity suffer.
2. If we do not resolve the problem of ownership of original work, then innovation suffers.
3. If we do not provide accurate metrics, then meritocracy cannot function properly.
4. If we do not provide adaptability, then differentiation and continual improvement will be very difficult to achieve.
5. If we do not embed intelligence into the files, the most relevant search queries cannot be returned by even the most improved algorithms, thus negatively impacting productivity and innovation.

### Problems with other approaches that Kyield has addressed:

- SW search engines can only process documents that have been previously annotated or subjected to currently available imperfect conversion techniques (LSI). Kyield empowers the individuals and organization to build their own structured databases which can then return more relevant database queries.
- While most SW technologies do employ automated ranking, they do not address the garbage-in/garbage-out problem. Kyield's descriptive file wrappers contain more relevant information on individuals, project teams, business unit, and organization; reversing to quality-in/quality out.
- While most SW technologies can help in reducing information overload, only Kyield enables clients to manage quantity and quality.
- No other known SW suite addresses the problem of the structural disincentive for sharing knowledge. Kyield enables the organization to align incentives in the digital work place with the option (recommended) to integrate with HR systems to improve merit-based compensation, reversing a disincentive for innovation into an incentive.
- Very few of the SW product suites include both communications and Web servers in one system. Kyield performs all intellectual work within one holistic system by including both communications and Web databases.
- SW systems are faced with the challenge of needing more processing power. Kyield addresses the challenge with adaptable filtering controls as well as the modular design that is scalable by business unit.
- The combination of performance metrics and adaptable management modules found in Kyield raises the bar for continual improvement, with continual learning an integral part of the design.
- The flexibility within the Kyield architecture gives client organizations the ability to craft a custom system for their specific needs and mission at the level of the organization, division/unit, and individual, providing the critical ability to differentiate the organization's work products and culture in the highly competitive global economy.

“The biggest issue at stake in this emerging age is the ongoing tension between creativity and organization. This is, perhaps, the most critical and intractable management trade-off of all, and therefore, the one most worthy of inspired innovation.”  
— Richard Florida

“Innovation is not the product of logical thought, although the result is tied to logical structure.”  
— Albert Einstein



## THE KYIELD ENTERPRISE SUITE

While Kyield can be integrated fully with products installed on the PC, such as Microsoft's productivity suite, the current design employs a Web browser interface that requires minimal additional technical training.

"An innovation is one of those things that society looks at and says, if we make this part of the way we live and work, it will change the way we live and work".  
— Dean Kamen

The Chief Knowledge Officer (CKO) Module is the hub of the Kyield system. The designated virtual CKO can tune Kyield to manage and enhance the knowledge yield, or output, of the entire organization. The CKO Module regulates the security parameters, subscriptions, technical integration details, and system-wide controls for quality and quantity. Each business unit has a similar module which can then further optimize the yield curve for their specific business unit within the system parameters set by the CKO Module.



Illustration 4: Kyield CKO Module

Each subscriber to the Kyield system inputs data through their My Kyield suite of tools during the natural course of work. My Kyield offers sophisticated controls for adjusting the volume and quality of inbound messages to their Kyield account. The flexibility of My Kyield is limited only by the parameters set with the master CKO and the Business Group Modules. The My Kyield suite also provides the Metrics Module that displays the member's work flow by activity and project. Individuals can see the hours spent, percentage of time and the number of times in a week the member engages in each activity and project. Areas that need improvement appear in yellow and red. Areas deserving reward appear in blue and green.

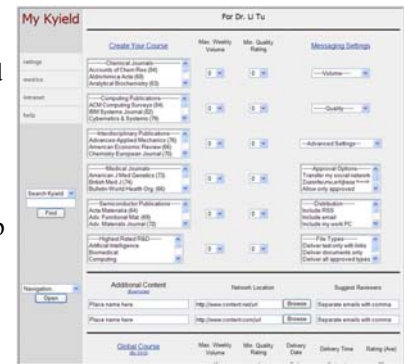


Illustration 5: My Kyield Consumption

With the Project Module, each member can view all of their current projects and ratings for them. Links to project scope, tasks, team members, and schedule make it easy to delve into all the details of a project. Project leaders can also edit the details of projects they lead.

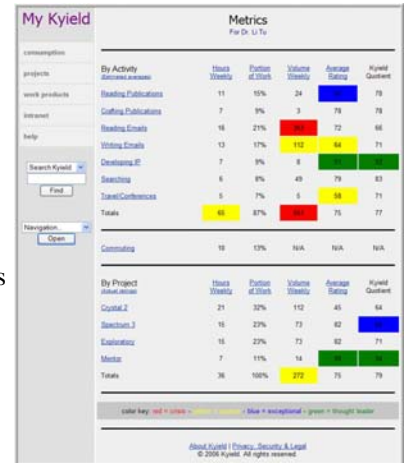


Illustration 6: My Kyield Metrics

Because every file in the Kyield system has been tagged with semantic intelligence, Kyield search is more accurate than unstructured search. Finding the highest ranked patents or documents becomes a simple task, as does scanning the top risks to the business unit or organization according to domain experts. Individuals no longer invest up to a quarter of their work day searching for hidden information, and essential information is no longer hidden from those who need access.

## CONCLUSION

A series of serious preventable crises has demonstrated the extraordinary costs of misaligned incentive structures and lack of accountability in mission-critical tasks. Senior executives in many of the world's leading organizations are now seeking a higher level of IT functionality that rises to the level of their challenges. Kyield is in a unique position to answer the call.

“In the years to come, progressive companies will use the Web to overcome the shortcomings of their antiquated, bureaucracy-based management models — flaws that today severely inhibit the capacity of these organizations to adapt, innovate and inspire ..” — Gary Hamel  
*The Future of Management*

The substantial investment in basic semantic research combined with Kyield's multi-disciplinary approach to product development has raised the bar to a new higher level of functionality across the enterprise. Once Kyield is deployed, the organization and the individual have the ability to manage the yield, or output, of human capital. By increasing meritocracy and accountability, conflicting interests between the organization and the individual are greatly mitigated, and by reducing the unnecessary distractions to work, individuals can spend more time thinking, working with others, and on creative problem solving; thereby empowering Kyield clients to *unleash the innovation within*.

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