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Brawijaya Women & Children Hospital  
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Lufthansa Systems

# System Overview White Paper

## Executive Summary

With the Internet moving from a passive publishing medium to an interactive business environment, almost all corporations realized that a strategy for sales and support over the Internet is needed to remain competitive.

For most, however, the biggest challenge is not if or when to consider an Internet solution, but rather how to select the best strategies and tactics to develop and sustain competitive advantage. But, implementing an Internet capability to address the unique needs of customers, business partners, suppliers, and employees is no easy task.

Most are resorting to either appointing development houses that must start from scratch and “rebuild the wheel” almost always, or purchasing massive — and expensive — products, which most organizations can only utilize just a fraction of the applications functionality.

SunFish offers an alternative. A “factory floor” for creating Internet applications, SunFish provides an overlay engine that commoditizes the work of a development house.

## DataOn SunFish System Introduction

The DataOn SunFish System is a combination of a high-level application platform, a library of modular applications and a web-based software development kit.

Producing a complete web system with SunFish allows organizations to quickly rollout a solution to meet their current needs while maintaining the flexibility to extend the system as future requirements arise.

SunFish offers a platform for database enabled, dynamically generated on-line solutions for private and public organizations across all industries, and allows corporations to realize their web aspirations quickly and economically on a stable, scaleable platform.

Development houses and IT departments can utilize SunFish to develop custom applications that meet specific requirements, while maintaining the benefits of a completely integrated platform.

SunFish provides a customizable administration platform that incorporates existing applications available in the SunFish Application Library (SAL) or custom developed applications using the SunFish Development Kit (SDK). SunFish also provides integration to existing legacy systems and compatibility with a variety of hardware platforms, operating systems, databases and web servers.

Once configured the customized SunFish system is “wrapped” in a desired graphic shell to produce the final product. In short, SunFish offers the fastest respond in building and managing powerful large-scale on-line solutions.

SunFish provides the following functionalities:

- System Administration
- User Administration
- Application Administration
- Role-Based Security Administration
- Data Admin Module
- Delivery Channel and display management

The functionalities will be further discussed in the SunFish Core Architecture section.

The SunFish Factory takes:

(i) existing platforms (O/S, database, web server) and (ii) legacy applications (the existing programs and specific applications), and run them together with SunFish Modules (existing DataOn modules, partner modules, and customized modules) to allow organizations to make complete online applications, such as WAP, web, XML or SMS.

The SunFish Factory enhances productivity by reducing routine task building so that more resources and time can be concentrated on critical applications tasks.

For an organization, this means faster, less expensive turnarounds for making unique applications. And with SunFish’s enhancement capabilities, more value-added functions could be easily added.

An added benefit is that unlike making a web application “from scratch”, which entails having to deal each time with problems of security, scalability, stability, and extensibility.

The SunFish Factory simply solves all of them by including them in its Factory architecture.

## SunFish Architecture

The first layer includes the hosting and integration platforms. This layer controls the integration of a wide variety of hosting platforms and third party applications.

The second layer consists of a modularized infrastructure, administration functions, development platform, and development tools.

Module infrastructure and administration function set and control all the applications in SunFish, while development platform and development tools provide an environment for the developer to create or enhance the SunFish Applications. Third party software, — such as ColdFusion Studio, Adobe Photoshop, and Macromedia Flash — can augment the application development.

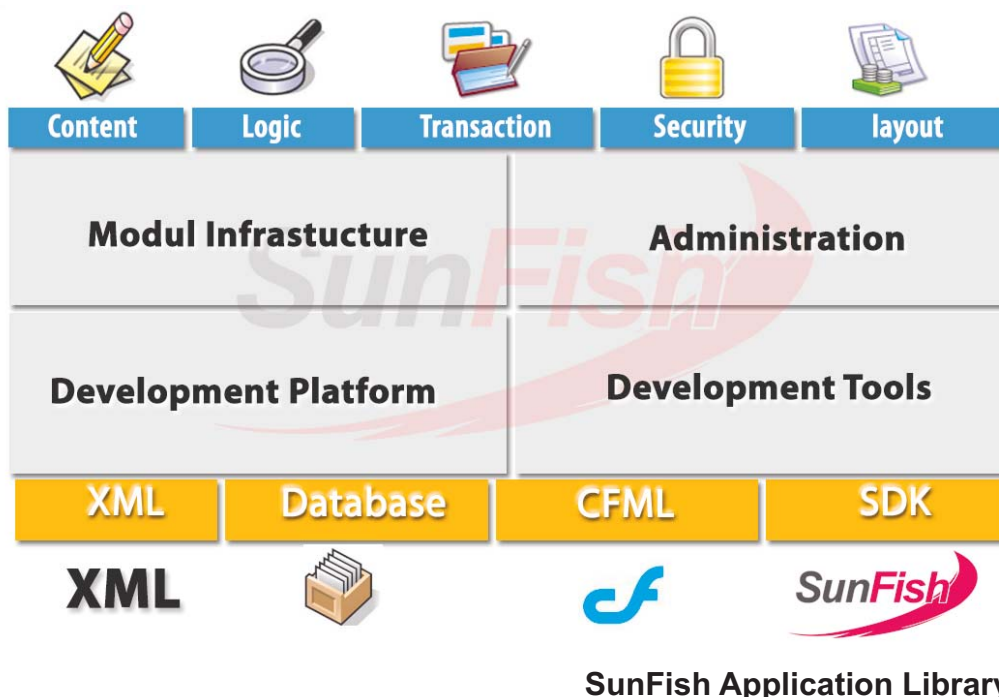
SunFish custom development is performed using CFML (ColdFusion Markup Language), HTML, JavaScript and java, then implemented on the SunFish Application Platform, integrating databases, such as MS SQL and Oracle. The platform also supports native drivers for most databases, including ODBC, OLEDB and XML.

The SDK is a development toolset and web based interactive development environment for use by developers in combination with the Macromedia ColdFusion development environment.

The third layer features several types of core web processing components, which are provided by DataOn and partner companies. These components — B2B (Business to Business), B2C (Business to Consumer) and Content Management — provide back-end processing and are included with modules installed to SunFish.

The top layer features the integration ready modules currently available in SunFish Application Library. Modules are produced by DataOn and SunFish development partners and are continually increasing. Each is purchased independently from SunFish, then installed and configured by an administrator.

For complete information about these modules, please refer to the SunFish Application Library documentation.



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### The SunFish Development Kit

The SunFish Development Kit (SDK) is a development toolset and web based interactive development environment for use by developers in combination with the Macromedia ColdFusion development environment.

The SDK provides a set of tools, which are used by developers to integrate systems they develop to the Satria platform and to improve the efficiency of their development by reducing the need to recreate standard web features.

Developers using the SDK can produce their own application more rapidly by taking advantage of the core SunFish features.

SunFish provides a variety of ready-to-use custom tags and associative database tables, easy-to-use ColdFusion tags, a web development tool, as well as the complete documentation to enable web developers to create their own web applications.

The SDK is completely integrated to Macromedia ColdFusion studio, an industry standard web development tool.



#### DataOn Development Services

DataOn realizes that no single Internet system can meet all the needs of an organization's web based system.

In any major web project a certain amount of custom developed modules or enhancements will be required to produce a total solution.

DataOn, both internally and through development partners, is able to meet these needs on an outsourced development basis for organizations that do not wish to handle these requirements internally.

Use of DataOn development services is a cost efficient and rapid way to fill in the most specific requirements for a web project.

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## SunFish Platform

The SunFish platform is focused on providing a complete architecture for web-based applications, while ensuring the entire system adheres to the following standards:

### • Security

All sites need a variety of security features. The SunFish system incorporates a complete security framework based on a granular function and roles-based security matrix. This framework allows the definition of security for all participants across every application in the system.

This security matrix verifies all requests to the administration site before granting access to the system. In addition, SunFish implements security features provided by the ColdFusion application server, leading databases, operating systems, and web servers.

### • Stability

The SunFish system is highly tested and used by many organizations — both private and public. Web systems, however, rely on many components working together.

SunFish works together with most of the industry's leading hardware platforms, operating systems, databases and web servers to allow organizations the flexibility of combining desired components, while achieving the level of stability that the operations require.

### • Scalability

Most Internet endeavors begin small and grow rapidly, businesses must be prepared for potentially exponential growth, initial cost for software and hardware must be minimized.

SunFish is built on a multithreaded cluster ready platform. The clustered hosting environment for web applications consists of a collection of servers, which would include multiple processors, serving identical web content and some services to boost server performance.

All this means additional CPUs and servers can be link together with the incorporation of a variety of load balancing strategies to allow for incremental investment in IT infrastructure, without having to discard old equipment.

### • Extensibility

No single software can completely meet the rapidly changing needs of an Internet focused business.

Although SunFish provides a wide array of modular applications through the SAL, organizations are still able to custom develop platform integrated applications and interface with their existing legacy applications.

The SDK allows organizations or their outsourced development providers to custom develop modules for their specific needs.

For organizations with existing systems or databases, standard interfaces are available through ODBC, JDBC and XML to provide integration and, if a standard interface cannot meet the requirements.

SunFish allows for the development of customized interfaces based on open standards.



## Development Economy

Over 80% of the time required to develop an on-line solution is devoted to project planning and system administration module development including security. Put simply, each project spends a significant portion of the project time rebuilding “the wheel.” The rest of development time is spent on functional applications, often rebuilding applications that were built before.

SunFish is a development platform that handles system administration as well as provides a flexible structure for project planning. Incorporation of SunFish results in great timesaving as well as a stable product.

The platform also includes Role-based security, data archiving and optionally: Multi-language management; Help management; Report generation; and Advertisement modules, which enhances the functionalities of the system.

SunFish allows for rapid, economical development and management of powerful Internet solutions. It is a well-designed solution that is easy to operate, inexpensive to maintain and, will satisfy an organization’s evolving business requirements. It is cost and time effective: economical, scalable, secure, stable, and functional.

SunFish allows for seamless integration of application modules that are available from the SAL or custom developed using the SDK. Incorporating applications from the SAL will greatly reduce the time-to completion and, again, increase the stability. DataOn is allocating significant development resources towards increasing the number and range of applications in the SAL.

DataOn is also forming partnerships with SDPs that will add to the SAL inventory. These partnerships will leverage on the expertise of SDPs around the world and offer a wide range of solutions far more quickly than any one provider could.

It is DataOn’s goal for the SAL to meet over 75% of potential clients’ applications needs.



## Solution Development

SunFish is capable of rapid project planning and prototyping. The project team can quickly configure SunFish and integrate applications from SAL to develop a functioning prototype for client review and comment. This means system specification development can proceed hand-in-hand with functional prototyping.

Graphic elements including user interfaces of the solution then can be laid “on top” to produce the versioned solution.

This method of solution development provides for a “visual” process that encourages early input from all levels of an organization, especially those that may have difficulties visualizing the system by just reading the system specifications. Every input will significantly reduce re-work time, which is a major contributor to development delays and cost overruns.

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Member of Bhakti Investama Group

## Our Vision

To be a leading global provider of customized eBusiness solutions by delivering individual solutions that meet the needs of every organization.

DataOn aims to be the leading provider of integrated business solutions for small, mid-market and corporate businesses. We help companies across the globe in their quest to realize their potential by providing cost effective, end-to-end business solutions that are integrated, upgradeable and adaptable.

With offices in six different countries around the world (Indonesia, Singapore, Germany, Thailand, Canada and Switzerland), DataOn provides quality customer service and after-sales support.

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## • Admin Management

This section controls all functions that administrators have access to. The system is pre-configured with a 'superadmin' who has access to all system functions, and each administrator who has access to all functions specific to the associative application.

The administration management operates on a granular admin-group-function access matrix. The architecture allows custom definition of administrative functions. This feature can be activated individually for administrators or for a group of administrators.

The system logs the actions of all administrators accessing the system. The 'superadmin' actions are always logged. Logging is a security feature that monitors the actions of the administrators, so it would be possible to audit the actions made in the administrative area.

## • User Management

User management incorporates a similar security model to Admin Management with a variety of tools to profile and analyze users. Multiple collections of user privileges are supported allowing different groups their individualized security access.

User activities can be logged and analyzed for many purposes, including security, future enhancements and site customization.

For advertiser-users, the system is further able to define accounting and tracking attributes.

## • System Management

This section controls high-level application settings, which include the global application-wide settings for the entire application environment and key information specific to each application environment.

Display setting allows administrators to customize graphics, colors and font styles, across all applications, to meet their changing needs, incorporating and enhancing the functionality of Cascading Style Sheets.

There is one default style sheet template available for all application. Each application can further have its own style sheet templates.

Layout Configuration allows an administrator to choose predefined application specific design templates, and then completely customizes those templates through the use of standard HTML as well as some basic ColdFusion statements, and a web based visual editor.

System processing is separated from layout through the use of the SDK.

## • Archive Management

The archive management section allows the administrator to purge unnecessary data from the existing database, either manually or at custom defined intervals, to a secondary database. The SunFish developer can select any tables for purging. The administrator can then use their database manager to back-up the database to a secondary medium. The administrator is also able to restore data from the archive database back to the primary database. Records of all archives are stored in the secondary database.

This feature allows SunFish to keep its database at a manageable size. Therefore, the entire system performance will remain stable and performance degradation experienced during increased usage will be minimized.

## • Module Management

This section controls the actual functionalities of the application modules. Each application module comes with a variety of functions that can be customized or configured to the customers' requirements. Module management will maintain all the information needed by each function, which can be customized by the administrator.

Administrators can enable or disable functions. Each function will provide all related information for the application and will allow access to specific administrative functions for each application.

## • Module Installation

This section allows an administrator to install, uninstall and upgrade system modules with a user-friendly interface. When administrator chooses to install a new module, the system will extract the application module installation file, copy the source code to a new or existing directory for that module, install or upgrade the necessary custom tags, and upgrade the system database.

The uninstall process will remove all the installed files, source code and all the related system files from the SunFish system. In addition to installation and uninstall process, there is also an upgrade process, which would copy the latest release files, source code and system database to the SunFish system.