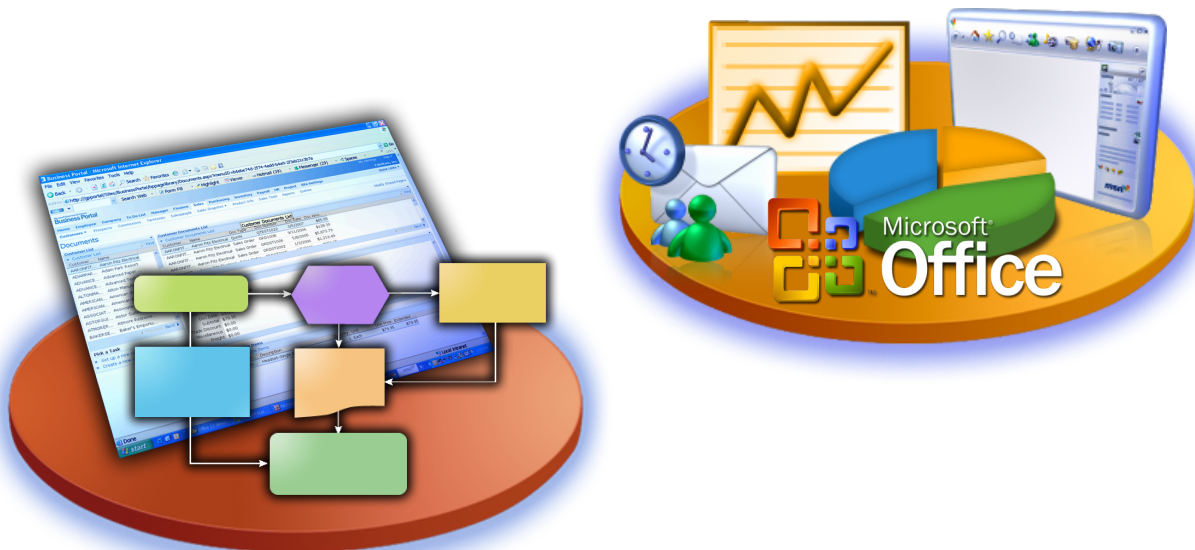


Office Business Applications (OBA) for Healthcare Organizations

Make better decisions using the tools you already know



ABSTRACT

Healthcare information is getting more and more difficult to manage every day. Healthcare organizations are faced with key issues relating to management, regulatory, contracts and reimbursement. They are never rid of these issues and they result in being an overhead to regular operational work. The work in turn is becoming more complex and abstract and these organizations are short on time and staff.

Patient care is the primary focus for all healthcare organizations. In recent times, we have seen an explosion of healthcare information. Healthcare executives should not waste time searching for information in various places and in various applications. Hospital administrators do not need to be overwhelmed with redundant and inconsequential data. What they need is correct information at the correct moment.

Executives find it difficult to focus their time on the one important goal - PATIENT CARE. But they are not able to achieve their goal. Why is this? Is this too much to ask? Are there any solutions?

This paper discusses the common problems and challenges faced by decision makers in any healthcare organization and provides optimal solutions. Office Business Applications (OBA) will help decision makers make better decisions using the tools they already know. This paper will acquaint decision makers with the benefits of OBA and explain with examples & case studies as to how OBA acts as a catalyst in improving productivity and ROI for healthcare organizations.

Challenges faced by healthcare organizations

The healthcare industry is facing many challenges ranging from increasing cost to inflexible and brittle applications. The industry is looking for ways to control costs, improve care and overall patient health. Healthcare organizations depend on Line of Business (LOB) or Enterprise Applications (EA) to support their mission critical functions. Once invested in one or more applications, business processes are redesigned, resources are re-aligned, and people are re-trained in an effort to maximize productivity and ROI. Also there is little to no integration between the applications, resulting in errors and duplication of information. In addition, these applications are brittle and do not adapt to the changes in the process.

Some of the common challenges faced by decision makers in healthcare organizations include

- The need to make better decisions using known tools
- Difficulty in measuring, comparing and responding to varying performance indicators
- Improving the access, accuracy and relevance of real-time LOB data
- Accelerating business success

Typical business scenarios

Many experts who study healthcare administrators have noted that they are often are not fully connected to or engaged with the applications and systems that are required to support their daily work. A user interface is confusing, mobility is slow or non-existent, reporting tools are complex – these are examples of usability problems that contribute to productivity gaps in daily performance. Without the effective use of technology to solve these problems, manual processes fill the gaps. As a result, many organizations never fully realize their ROIs and other benefits expected from these expensive EA purchases.

Some of our clients told us not so long ago:

“My hospital has a lot of applications that don’t talk to each other. It is very hard to obtain just the information I need from these applications.”

“When I need some information, I’m either overwhelmed with a lot of information that I don’t need or I get the wrong information.”

“My line workers waste too much time with manual work-arounds that only increase business risk.”

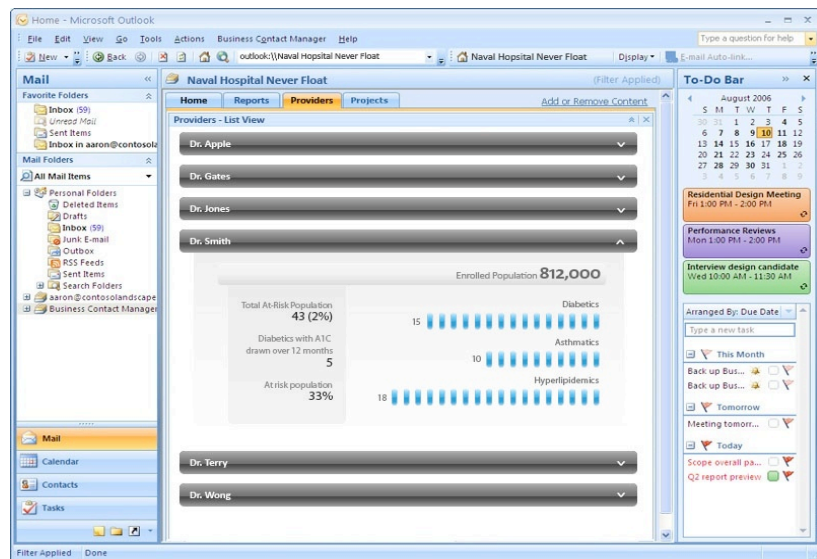
Our clients were expressing frustrations that we hear frequently. They feel disconnected from LOB systems and want their enterprise applications to be integrated into their daily workflow. This is where OBA steps in.

The solution: Office Business Applications

Closing the gap and improving productivity requires that our enterprise applications function the way people get their work done. Microsoft Office Business Applications are radically changing the way businesses “do business”. OBAs connect LOB systems and Enterprise Applications with the people that use them through the familiar user interface of Microsoft Office. OBAs enable businesses to extend their most frequently used desktop tools such as email, Outlook, or SharePoint into business processes running in LOB systems such as Enterprise Resource Planning, Customer Relationship Management, Supply Chain Management, and custom-built applications. This enables organizations to create new value from existing IT investments while improving productivity in measurable ways. It involves utilizing common Microsoft presentation, communication and collaboration software to maximize workflow, productivity and efficiency. Consider Microsoft Outlook.

Microsoft Outlook is one of the most commonly used tools in organizations world wide. Outlook can be interfaced with LOB systems through which decision makers can access necessary information. Consider the picture shown below. It represents a sample dashboard view of Key

Performance Indicators (KPI) and charts as it appears within Outlook. Decision makers are not only able to view critical data in real time, but they never leave the familiarity of Outlook, where they can take actions (such as sending an email, assigning a task, or setting up an appointment) upon review of the data. It is easy to use and it helps you manage your most basic and necessary business functions such as email, calendar and tasks.



The building blocks of Office Business Applications

The 2007 Microsoft Office system brought us more than just an upgrade of our old Microsoft Office suite of Word, Excel, PowerPoint, and Outlook. With enhancements to 20+ client applications, servers and other software tools, the 2007 Microsoft Office system offers a fully integrated platform of technologies that serve as building blocks for new and innovative business solutions. The 2007 Microsoft Office platform includes:

Microsoft Office Clients

Access 2007, Excel 2007,
Groove 2007, InfoPath 2007,
Outlook 2007, PowerPoint 2007,
Word 2007

Microsoft Office Servers

Communications Server 2007
Exchange Server 2007
Forms Server 2007
Groove Server 2007
SharePoint Server 2007

Services

Excel Services
InfoPath Forms Services

Tools

Visual Studio Tools for Office
Visual Studio Team Suite
Visual Studio Professional
Microsoft Office SharePoint Designer
2007

OBA Technologies

Business Data Catalog
Extensible UI
Open XML File Format
Search
Website & Security Framework
Workflow

In addition, both client and server side extensions can be created using .NET APIs and SOAP based Web Services.

These building blocks can be deployed, configured and customized to solve a wide range of problems facing today's businesses including business intelligence, unified communications & collaboration and enterprise content management. Most importantly, well designed OBAs improve productivity and increase the ROI of existing IT investments.

Value proposition of using OBAs

- Better access to information
- Improve access to real-time LOB data
- Immediate Interactive Analysis
- Improved accuracy and relevance of data
- Easy to understand
- Ability to take actions
- Uses known tools

iLink's OBA solutions

iLink's Optimization Solutions practice (iLink OS) began creating Office Business Applications for our clients in 2007. With years of experience in developing portals, mobility solutions and database applications that utilize sophisticated UIs, iLink OS leveraged existing expertise to bring OBA solutions to market.

Our OBA solutions enhance enterprise applications and automate common manual workflows such as reports being generated in Excel and then circulated through printouts or email. iLink OS will deliver OBA solutions enhancing commercial applications and custom-built legacy applications in both the commercial and government sectors.

Examples of iLink's OBA solutions and capabilities

- **KPI Dashboards:** Enterprise applications are terrific for collecting and storing data. Extracting and presenting data has been a market-wide challenge leading to the emergence of many third party analytics and reporting tools (Cognos, Business Objects). Tracking a business's KPIs should be as easy as email – and now it is. Utilizing SharePoint as both a data brokering engine and presentation layer, custom Web Parts are developed in an Outlook-based dashboard to track and manage KPIs. SQL Server provides the analytics. A seamless, flexible solution puts data at your fingertips, that include mobile alert systems and real-time response.
- **Enterprise Content Management (ECM) and Search Capabilities:** By incorporating the capabilities of Microsoft Content Management Server 2002 (MCMS) into Microsoft Office SharePoint Server 2007, Microsoft has created a comprehensive platform for managing content including web content, documents and records. Combining content management with workflow capabilities and the ability to apply metadata automatically provides a great opportunity to build content focused OBAs. Enterprise Search in Office SharePoint Server provides a suite of extensible content gathering, indexing and querying services that support full text and keyword searches. Search can take place not only across SharePoint Server content, but also across Business Data Catalog (BDC) sources, SQL Server databases, Exchange folders and even external websites.
- **Workflow:** Daily work often requires multiple people to utilize the same document. Multiple versions, lost documents and similar workflow problems are very common and disrupt productivity. Windows Workflow Foundation forms an integral part of the Office Business platform to facilitate automated workflow processes. With a workflow, events can automatically trigger changes in the flow or users can select actions based on their needs. For example, in an approval process, a document may automatically be placed on hold or forwarded when a dollar amount exceeds a threshold. A number of common workflows are provided out of the box while customized workflows can easily be created using OBA tools.
- **Extended User Interface (UI):** Presentation, collaboration, and communication are necessary for the successful adoption of any line of business system. Does an Enterprise Application (EA) suffer from poor adoption? Before an organization invests additional time and money to replace it for another expensive EA, consideration should be given to extending its usability with Microsoft based tools. Adding an improved UI, mobility, work sharing and collaborative meeting tools might exactly be what is required. OBAs are designed to make existing systems more productive.

OBA solutions at work – KPI dashboards for an iLink client

Recent opportunities in healthcare industry have enabled iLink to demonstrate the advantages of an OBA solution utilizing existing software already owned by clients and used by their employees. Dashboards that integrate Microsoft Office, SharePoint and existing enterprise applications without disturbing those core applications have proven to be a successful business intelligence tool enabling hospital executives to better manage their facilities.

The Challenge

Like most hospitals, iLink's client utilized multiple enterprise applications to support the various lines of business within the organization. Finance, patient registration, emergency room, surgery, pediatrics, pharmacy, etc. were operating with applications designed specifically for those particular businesses. The hospital had invested significant resources to integrate some of these applications in order to improve performance. Still, there was no simple way for hospital administrators to track KPIs across so many businesses within their organization. Executives needed to log into individual systems in order to access reports for each application supporting their business.

Before iLink's OBA solution, the client identified a number of problems with their existing environment. Furthermore, the client had considered implementing a new enterprise application that natively integrated more LOB systems but the cost was prohibitive, the migration risks too high and the time to deliver too long.

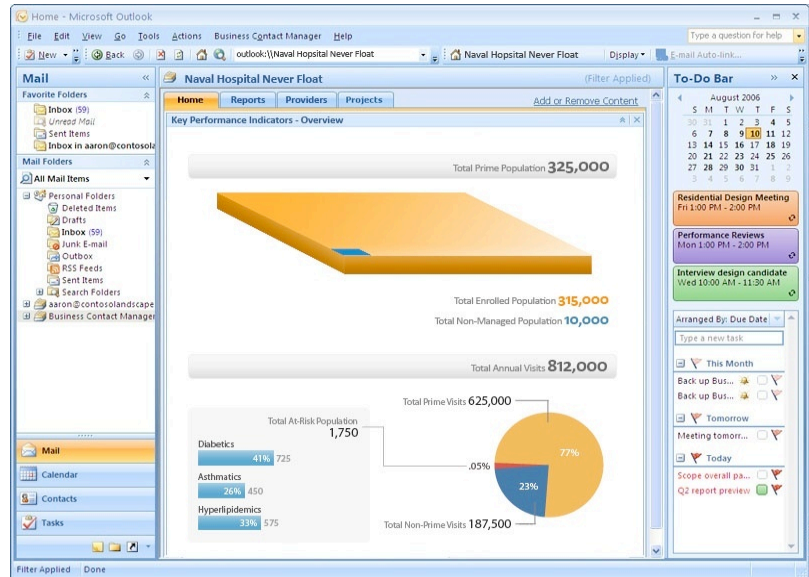
The challenges faced by our client included:

1. No integrated report engine: Accessing important KPIs took time and required logging in and out of multiple systems.
2. Reporting integrity: Accurate reporting required manual data validation and re-entry as additional reconciliation processes were required to find and correct errors.
3. Data filtering: As a result of some of the manual reporting processes, executives were concerned that they did not have access to unfiltered data that would reflect the true current state of operations.
4. Lack of mobility: There was no way to deliver important KPI updates to executives who were away from their desks.
5. UI inconsistencies: This slowed down adoption and executives were frustrated by the variety of UIs they faced each day when attempting to access the data they needed.
6. Nothing to start the day: Executives wanted KPIs delivered to their desktop or mobile unit to start each day. They did not want to wait, search or waste time looking for the information they need to assess their businesses and make important decisions.

The Solution

The client already utilized Microsoft Office and SharePoint licenses had been purchased to create a document management system. To address the client's problems, iLink developed a series of SharePoint web parts that would serve as KPIs, pulling the desired data from legacy applications and presenting them in a dashboard that would have a familiar look on the desktop.

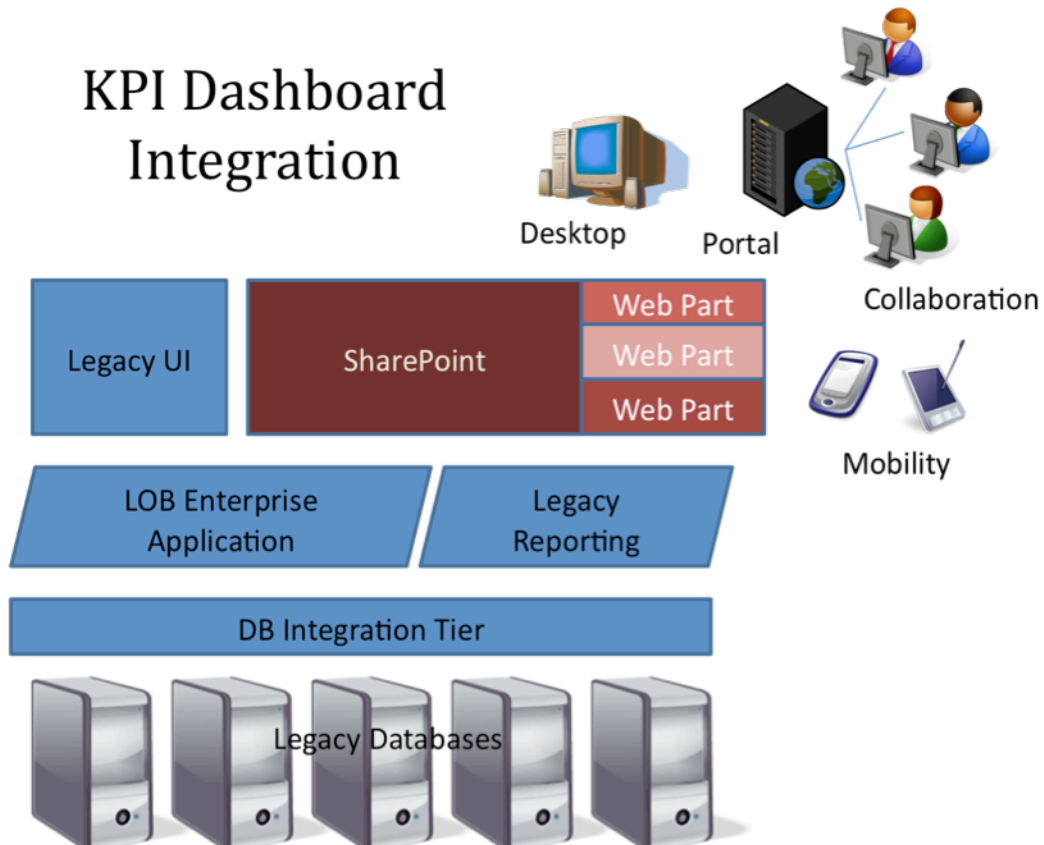
The figure on the right represents a sample dashboard view of a single KPI as it appears within Outlook. Executives are not only able to view critical data in real time and at any time but they never leave the familiarity of Outlook, where they can take actions (such as sending an email, assigning a task, or setting up an appointment) upon review of the data. Email alerts were also created to provide mobile notification when certain KPIs changed their performance status.



The project began by focusing on just one of the hospital's enterprise applications. In so doing, we did not disturb the legacy system, its existing reporting engine or the current UI. Instead, iLink optimized the application with a cost effective solution that dramatically improved the user experience.

Simple architectural diagram

The figure below represents a simple architectural diagram of the solution's first phase. Upon successful implementation and adoption, the client extended the number of KPIs and supported EAs.



Benefits of iLink's OS solution

The client enjoyed a number of benefits from the optimization solution. These include...

1. Improved access to data and reports that resulted in better mobility.
2. Unfiltered data access as the executive sees the data as it is stored in the LOB applications.
3. Higher ROI on existing enterprise application investments. The client was able to optimize rather than replace an existing Enterprise Application.
4. Improved productivity resulting from improved User Experience, reporting and mobility.
5. Little to no training costs for employees using the dashboards because they were built from existing technologies already in use.
6. Fast adoption of the new dashboard and features by users.
7. Faster response to time-sensitive incidents.
8. And in all cases, saving time = saving money.

About the author:

Anand Gaddum is the Director of Healthcare Practice at iLink Systems, Inc. He has broad healthcare domain knowledge with special emphasis on claims and has implemented a number of change initiatives for healthcare organizations. He has a proven track record in a variety of fields which include medical instruments, software development, training and change management.

About iLink Systems:

iLink Systems is a custom software solutions provider and Microsoft Certified Gold Partner. Our solution capabilities include enterprise application development, optimization and integration; web application development; user experience architecture; and mobility application development and services. Our vertical industry experience includes: healthcare, government, technology, telecom, and nonprofit. iLink has worked with companies and organizations at all levels of business maturity, from startups to the Fortune 50. Our accomplishments also include numerous rapid application prototype development and complex solution migrations from one technology framework to another.

Headquartered in Bellevue, Washington, iLink has offices in Washington, D.C., Atlanta, GA, and Chennai, India. With over 120 employees and growing, iLink has been providing business solutions for over six years. Members of our team have numerous certifications in a variety of technology and solution frameworks, particularly on the Microsoft platform.

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