

SCBOS

South Carolina Business One Stop

Contents

CONTENTS	2
1. INTRODUCTION.....	3
2. BUSINESS OBJECTIVES	4
3. BUSINESS-DRIVEN CHALLENGES	6
4. INNOVATIVE TECHNOLOGY	8
4.1 WORKFLOW MAINTENANCE UTILITY AND WIZARD CONTROLLER	8
4.2 CHILD WORKFLOWS, REPEATING ENTRIES, AND DYNAMIC DECISIONS	9
4.3 ARCHITECTURAL BEST PRACTICES	10
4.4 INNOVATIVE PRODUCT CAPABILITIES.....	11
5. BUSINESS RESULTS.....	15

iSOLUTION™
Methodology

1. Introduction

TiBA Solutions, headquartered in Greenville, S.C., provides customized information technology solutions for mission-critical business needs. We offer a full line of services: strategic planning, business consulting, project management, and customized software application design and development.

The effectiveness of our project approach and technology experience produces solid results: quality solutions delivered on time and within budget and with high performance, availability, reliability, and security.

SCBOS Background

Historically, organizations and professional individuals wishing to do business in South Carolina have had to work with multiple state, county, municipal, and federal agencies to accomplish the necessary registration, licensing, and permitting functions. Each agency has its own processes and forms, so that applicants are required to provide business information multiple times in multiple ways, and even the initial step of identifying all the necessary registrations to be in compliance can be a challenge for a young start-up company.

The South Carolina Business One Stop (SCBOS) is a multi-agency endeavor to provide complete registration, licensing, and permitting functionality, including both initial licenses and selected renewals, from a single web-based interface, to entities desiring to do business in South Carolina. The key objective is to deliver business productivity.

SCBOS Phase I started in June, 2003 with the core group of five agencies to be initially supported by SCBOS: South Carolina Office of the Secretary of State, Department of Revenue, Employment Security Commission, Department of Labor, Licensing, and Regulation, and Department of Health and Environmental Control. Additional state participation included the S.C. Department of Commerce and the State Budget and Control Board. County and municipal perspective was provided by the Association of Counties and the Municipal Association of South Carolina. Business perspective and sponsorship was provided by the S.C. Chamber of Commerce.

Working closely with the State, TiBA Solutions delivered the SCBOS Requirements Engineering; Conceptual Design; Global, Functional, and Technical Designs; a significant portion of the Construction; and support for User Acceptance Testing, Implementation, Roll-out, and Operational Support. TiBA Solutions performed most of this work at its offices in Greenville, S.C. with the remainder on-site at the agencies' locations in Columbia, S.C.

SCBOS was available for business use on May 24, 2005 and can be accessed on the South Carolina State Portal or directly at www.scbos.com.

2. Business Objectives

Key executives from each of the participating agencies provided guidance to establish the high-level direction for the SCBOS project scope and objectives. The SCBOS Executive Committee established the following business objectives:

- ◆ Support business growth in South Carolina

By reducing the procedural barriers to entry for new businesses, the state can encourage business growth, which is a high priority statewide. An efficient process decreases start-up time and resources for new businesses. This is particularly advantageous to small businesses with limited staff. **Supporting business growth, especially for small businesses, is the most important of all the SCBOS objectives.**

Demonstrating technology capabilities, which benefit S.C. businesses, also encourages migration of existing out-of-state businesses to South Carolina.

- ◆ Offer improved, user-friendly customer service for new and existing businesses

Agencies must provide prompt and professional service. Registration and licensing processes are necessary, but do not contribute to the bottom line of a business. The objective of a business is to complete this process as quickly and efficiently as possible. It is important to assist a business in understanding the necessary steps and the sequence of agencies to be contacted. It is also important to reduce information needed by multiple agencies to a single point of entry.

- ◆ Improve the accuracy and streamline the flow of business information

Currently entry of the same business information multiple times into multiple agency systems results in similar – but not identical – data. For example, a business name may be spelled one way in one agency database and a slightly different way in another agency database. As a result, agencies cannot compare and synchronize information on S.C. businesses. It is important to distribute identical business information to all agencies.

- ◆ Shorten the timeframe for the registration and payment process

A shortened overall process requires improved information to assist the business in understanding what to do, greater accessibility and flexibility of the licensing and registration process, and fewer steps to complete the entire process.

- ◆ Increase productivity for businesses

An easy-to-use licensing process offers opportunities for business productivity and resulting savings to the business. An earlier study found that improving the licensing and registration process would allow the South Carolina business community to save an average of 47 hours per business – extremely valuable time on the part of the business owner and the attorney and accounting firm representing the business – and South Carolina has 10,000 startups per year.

- ◆ Increase revenue to the state

By reducing the burden of compliance, agencies can enable and encourage businesses to voluntarily comply with state regulations. The result is increased tax revenue. In addition, all licensing and registration revenue can be banked more quickly through a streamlined process.

- ◆ Increase productivity for state agencies

All state agencies are faced with budget cuts and the necessity to handle more work with reduced staff. When SCBOS was initiated, S.C. Department of Revenue was working at a 1969 level of staffing, S.C. Department of Health and Environmental Control was working at a 1978 level of staffing in some programs, and the Office of the Secretary of State had reduced headcount from 41 to 27 staff. Automation is essential to delivering mandated services.

- ◆ Enhance the partnership of sponsoring agencies

Reducing the need for time-consuming interaction between agencies to accomplish basic tasks during the licensing process provides additional opportunities for agencies to focus on developing new and more effective ways of working together.

- ◆ Increase efficiency and effectiveness

Agencies have been asked by the Governor to look for ways to simplify operations, eliminate redundancy, and modernize their operations. The SCBOS project is an opportunity to re-examine licensing and registration across multiple agencies and to identify redundant data collection and processing.

- ◆ Extend productivity gains to counties and municipalities in the future

The electronic licensing, permitting, and registration capabilities put in place for state agencies can be extended to local governments in the future. This framework opens additional productivity capabilities to both businesses and local governments. Care has been taken to be sensitive to the home rule issues vital to local government.

Each of these business objectives has been addressed by SCBOS, and in particular, a strong focus has been placed on supporting new business growth in South Carolina.

3. Business-Driven Challenges

Long-established, multi-agency registration processes and systems presented significant technical challenges to the creation of an online business registration system. The SCBOS application has developed best practices to operate successfully and, indeed, optimally within the business constraints described below, while offering the business consumer a highly productive working environment.

- ◆ Agencies have a large investment in business practices and procedures and in staff trained to follow these procedures. It would be expensive, time consuming, and impractical to reengineer these business processes as a prerequisite to implementing online business registration.
- ◆ At least for the near term, online business registration has to be in addition to, and not instead of, the current paper processes.

Based on individual preference, some business consumers will continue to submit paper forms; some business consumers will take full advantage of online registration; and some business consumers will use a mix of paper forms and online registration.

Even if the entire inventory of licenses / permits / registrations (LPR's) is implemented on the online business registration system, the process would require some time. During this time, the business consumer will have to use a mix of paper forms and online registration.

Unlike new registrations processed directly by the online business registration system, existing LPR's already on record at the agencies and new LPR's submitted on paper forms are not automatically known to the online business registration system.

- ◆ A large number of LPR's for current and future agencies are candidates for SCBOS implementation. The contents of these LPR's are subject to change on an on-going basis, based on statutory requirements and business needs. Using IT staff to maintain an ever-growing inventory of changing LPR's is expensive and, in fact, impractical – this responsibility is best handled by agency business analysts.
- ◆ Some business information is unique to a specific agency, and some is common across multiple agencies. Even common data may have different data attributes and naming conventions. It is a considerable challenge just to identify what information is truly common and what information appears to be common, but in actuality is not the same. South Carolina state law does not mandate, and agency practices have not established, a single business identifier shared across all agencies and established immediately upon the first registration for all business entity types.

- ◆ Agencies have a large investment in legacy applications and systems; there is little business value in duplicating the capabilities of the existing investment in an online business registration system. In addition, agencies have large databases of business consumer information; moving responsibility for this data to the online business registration system would be a huge undertaking with a major impact (rewrite) on the legacy applications.
- ◆ Business registration requirements vary by entity type, industry, and individual business profile. LPR requirements, prerequisites and co-requisites, and filing sequence across agencies are very confusing and time consuming for a business. Businesses need guidance through this multi-step process.
- ◆ Once the online business registration system moves beyond new businesses performing initial registration to existing businesses applying for additional LPR's and for renewals, a two-way flow of critical business information between the online system and the agency systems will be required.

The SCBOS solution addresses these business challenges in their entirety.

*i*SOLUTION™
Methodology 

4. Innovative Technology

SCBOS is a combination of content management software and web application software, taking advantage of the benefits of each technology while providing the business user with a single homogeneous application view.

- ◆ **Content management software:** SCBOS uses Microsoft's Content Management Server. Content management provides an efficient mechanism for creating, maintaining, organizing, and presenting the large inventory of information needed to guide a new or an existing business through the LPR process, for example, "what are the differences between an LLC and a corporation, which agencies require a registration, license, or permit and under what circumstances, and when does a business need a sales tax license?"

Content management software facilitates timely publication of updated information for the business consumers, for example, changes in regulations, refreshed business questions and answers, and agency bulletins and hot topics. Content management software also allows the knowledge experts from multiple agencies to be responsible for their individual sections of information, requiring little if any technical support.

- ◆ **Web application:** SCBOS has a unique custom-designed web application¹ that was developed using Microsoft's .NET Framework. A web application is used when the security needs, transaction-oriented nature of the page, and the amount of user interaction on the page cannot be effectively handled by the content management software, for example, "who is the business consumer, how far along in the process has he progressed, and what does he need to do to complete the LPR processes efficiently?"

4.1 Workflow Maintenance Utility and Wizard Controller

A Wizard offers assisted data entry, with prompts, validation, and contextual help. The technology to define and execute Wizards to support LPR workflow was critical to SCBOS success. Mandatory requirements included: 1) business analysts must be able to create and maintain their own LPR workflows, 2) workflows must be dynamically configurable, and 3) workflow must dynamically reflect the choices of the Business Consumer.

¹ The term "application" may be used in multiple contexts: a web application is a computer program; an LPR application is the electronic form for data collection.

TiBA Solutions investigated existing tools in the marketplace, but no solution came close to meeting the requirements. As a result, a custom SCBOS solution was designed and created with two critical innovations:

- ◆ The **Workflow Maintenance Utility** is a design innovation that provides the capability to define the steps in the workflow, layout the controls that are displayed within the step, and define the flow between the steps. This is done by business administrators without IT support.
- ◆ The **Wizard Controller** is a design innovation that executes Wizards created with the Workflow Maintenance Utility. The Wizard Controller dynamically renders Wizard pages based on Business Consumer decisions. The majority of the pages rendered are database-driven instead of pre-defined web pages. (Please see also *Innovative Product Capabilities* for more information on Wizards and workflows from the Business Consumer's perspective.)

4.2 Child Workflows, Repeating Entries, and Dynamic Decisions

The Workflow Maintenance Utility and the Wizard Controller use multiple innovations:

- ◆ **Child Workflows** provide the ability to encapsulate a common set of functionality that can be called by numerous other workflows. As an example, there is a standard "Add to Shopping Cart" workflow that is called by virtually all main workflows in the system. Child workflows can be nested and can be called multiple times within the execution of a Wizard.
- ◆ **Repeating Entries** provide the ability to collect multiple instances of a set of fields within the Wizard execution. For example, identifying the owners of a business requires a name, address, and other data related to the owner. There may be 1 to 50 owners entered. This is all done through a repeating entry child workflow.
- ◆ **Dynamic Decisions** provide the ability to control the workflow based on the Business Consumer responses during Wizard execution. To handle this, a module was created to allow the workflow developer to enter Code Blocks that are used to control the flow through the workflow. The Code Blocks are snippets of C# code using a predefined object model. The code can control the flow, inspect data that has been collected and control the rendering of controls. The "object model" provides access to information related to the current Wizard thus making the Code Blocks small and simplistic. The following is an example of an actual Code Block:

```
If (Controls["NbrEmployees"] == "0") {  
    SetDisposition("SkipFullTime");  
}
```

In the above Code Block, the check is being made to see if the number of employees is equal to 0. If so, the flow of the Wizard is altered to skip the page that prompts for the number of full-time employees.

4.3 Architectural Best Practices

The SCBOS application has developed architectural best practices to maximize business consumer productivity and minimize agency impact:

- ◆ One of the key best practices is through the use of a **Service Oriented Architecture (SOA)**. In this style of application development, interaction with each of the systems is through a predefined exposed interface known as a service. The caller of the service does not know, or need to know, how the software behind the service is implemented. This abstraction provides a significant amount of flexibility. Individual agencies can still use their existing registration processes and back-end processing without divulging much of that information to the other agencies involved.

The SOA can be used to expose the ability to process LPR applications and, in addition, to validate business rules against the agency systems. Instead of duplicating this logic in the SCBOS system, additional calls can be made to the agency system during the collection of the data. These calls can validate business rules and request data from the agencies to aid in the processing of the request. As an example, a call can be made to validate a prospective business name to make sure it is unique and available.

The SOA also abstracts the SCBOS Core System from having to know the back-end systems to which the data is transmitted. As an example, in one of the agencies, the data may be disbursed to an Oracle based repository, a mainframe application or a SQL Server based system depending upon the type of request made to this agency. The SCBOS Core System has no knowledge of which back-end system is handling the request. SCBOS only knows about the service it is calling. Therefore, if the agency decides to change the back-end processing, no changes are required to SCBOS.

- ◆ Another key is the concept of a **hub-and-spoke model**. In this model, the agencies (spokes) do not communicate directly to each other. Instead communications go through SCBOS (the hub) which then decides how to handle the information and which additional agencies may need to be notified. The advantage of this model is that the agencies are not relying on each other for information and do not have to know how to communicate with each other. Instead the agencies only need to know how to communicate to SCBOS.
- ◆ A third key is to allow **both synchronous and asynchronous communications with the agencies**. In some cases, manual intervention will be required in order to process and approve an application. This may take minutes, hours, days or even weeks. The software must support this requirement by starting a transaction and

handling the ability to receive the acknowledgement immediately (real-time) or at a later time (asynchronously).

4.4 Innovative Product Capabilities

SCBOS is unique in the marketplace today. Taken as a whole, the application is an innovative solution that moves beyond a simple data-collection forms system to a highly productive environment that guides the business consumer through the multi-agency LPR process; provides the business consumer with LPR management capabilities throughout the life of the business; meets agency needs for information protection, distribution, and cross-agency synchronization; and enables substantial growth in the total number of participating agencies and the total number of LPR's.



In addition, SCBOS includes specific high-productivity innovations within its overall capabilities. These individual innovations are flagged below as **Difference Makers**.

◆ **The Wizard** walks a Business Consumer through the data collection process.

The Wizard offers assisted data entry, with prompts, validation, and contextual help.

Workflow through the wizard is determined from information entered by the Business Consumer, so that Wizard questions and guidance are always pertinent to the specific business needs (**Difference Maker**).

The Wizard allows the Business Consumer to navigate through the wizard with Next and Previous, enabling the Business Consumer to back up, change information, and continue on an appropriate and potentially different workflow (***Difference Maker***).

The Wizard allows the Business Consumer to pause and resume, enabling the Business Consumer to collect business information or perform other business activities and then continue at his convenience with previously entered data still available (***Difference Maker***).

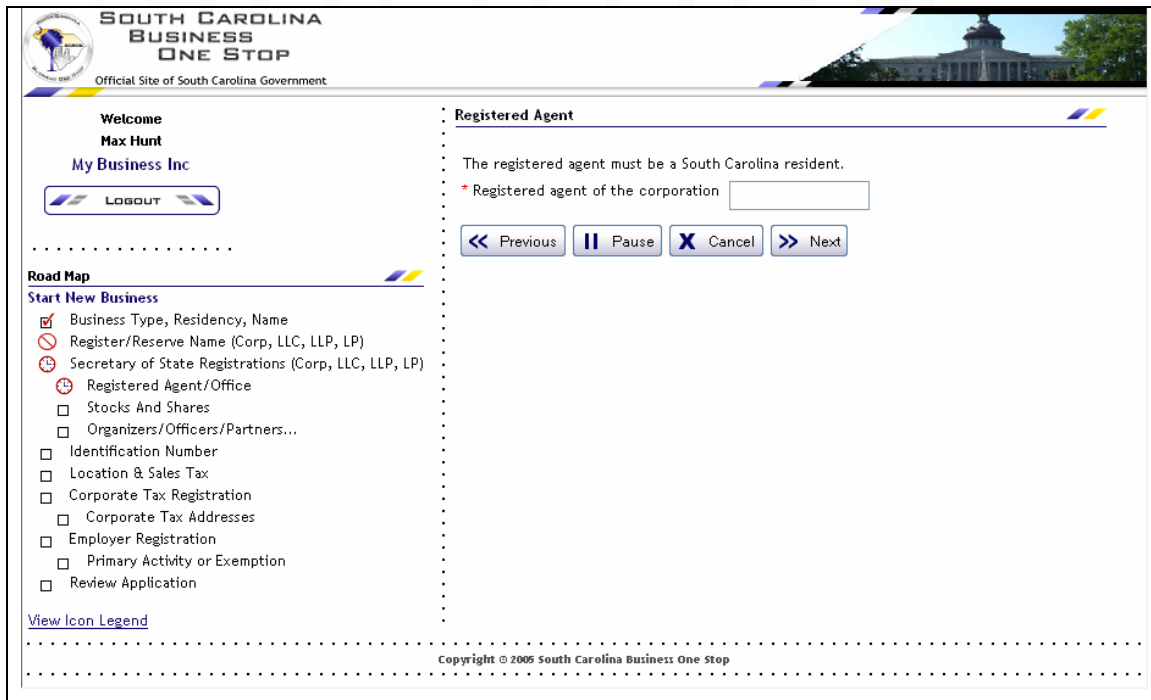
The Wizard allows the Business Consumer to reenter a Wizard to correct and resubmit a license application, if needed, based on an agency response (***Difference Maker***).

- ◆ **Special Workflow and Guidance** supports a Business Consumer starting a new business.

A Roadmap shows the Business Consumer how far along in the process he is currently and what the next steps are (***Difference Maker***).

Based on information provided by the Business Consumer, SCBOS identifies the LPR's that are potentially needed by the business (***Difference Maker***).

SCBOS enforces LPR prerequisites to ensure that LPR's are completed in the correct sequence (***Difference Maker***).



- ◆ **User Workspace** facilitates on-going management of the business, its locations, and LPR's.

A Briefcase of in-process LPR's shows their current status and provides a brief agency communication to the business regarding the LPR (***Difference Maker***).

The User Workspace is supported by an SCBOS cross-reference to identify a unique business across all agencies (***Difference Maker***).

- ◆ **Electronic Submission** automates presentation of LPR's to the agencies.

SCBOS submits multiple LPR's in the correct sequence to ensure that dependent applications are submitted only after approval of prerequisite applications (***Difference Maker***).

Architected agency interfaces protect agency investment in business applications and business data.

- ◆ **Electronic Payment** via Credit Card and ACH Debit payments offers convenience to the Business Consumer.

The SCBOS shopping cart provides the ability to combine payment for multiple LPR's into a single payment.

When applicable for an LPR, the Business Consumer can complete the LPR in advance and "warehouse" the LPR and payment transaction. After the time specified, SCBOS will automatically process the electronic payment and submit the LPR to the agency. As an example, the Business Consumer could set up a renewal ahead of time to be processed on the LPR expiration date (***Difference Maker***).

SCBOS allows an agency to specify whether its payments can be combined with other agencies (***Difference Maker***).

- ◆ **Robust Application Security** is designed to protect proprietary information and satisfy confidentiality and statutory requirements.

The Business Consumer controls who is authorized to access business, location, and LPR information. With appropriate authorization, a Business Consumer can access multiple businesses in SCBOS, thus permitting attorneys and accountants to support their clients (***Difference Maker***).

Business information is sent specifically to the agency whose LPR is submitted. With the permission of this agency, SCBOS will send a copy of selected in-common data to another agency (***Difference Maker***).

Only a limited set of non-proprietary business information is retained in the SCBOS data repository to identify and support the business. The limited information retained in the SCBOS data repository is not accessible by agencies.

SCBOS provides a secure, electronically generated, time-stamped audit trail for LPR transactions.

- ◆ **Practical scalability** supports future growth to many additional state and local agencies and LPR's.

A monolithic data collection application with imbedded logic can easily become so large and unwieldy that it cannot even run, much less perform responsively. SCBOS is architected for scalability, performance, and independence from individual agency business operations and rules (***Difference Maker***).

In addition, coordinating multiple agencies' access to a single massive application would risk application breakage every time a new LPR was added. SCBOS is architected for business analysts from many agencies to create and maintain their own Wizards independently (***Difference Maker***).

*i*SOLUTION™
Methodology 

5. Business Results

Below are the comments of state leaders at the announcement of SCBOS:

Michael Garon, Department of Revenue Senior Administrator and CIO and SCBOS Executive Project Manager, stated "One of the most complex application systems I have ever been a part of is being migrated to Production. South Carolina's Business One Stop breaks new ground in business and government cooperation, and even more so in agency to agency cooperation. All phases of the project have been strewn with obstacles, yet the commitment of the business and agency sponsors to the vision have kept the team focused on the ultimate goals."²

"We want to do absolutely everything we can to help small business succeed – it's as simple as that," said Commerce Secretary Bob Faith. "With this Web site, we're leveraging technology to make the whole registration and licensing process easier for our new businesses, and I'm proud our agency was a part of the effort, because nothing could be more in line with our goal of helping businesses be successful so they can create jobs and help raise the standard of living in this state."³

"South Carolina Business One-Stop begins a new era in the way we conduct business in our state. This new system streamlines access to government information, saves time, and removes bureaucracy – accomplishing the goal of being more user-friendly to our customers," said SC Secretary of State Mark Hammond.³

"SCBOS falls right in line with the philosophy of all the partners in South Carolina's One-Stop Workforce System – that is to do everything possible to make it easier for people to get the services they need to successfully do business in our state," said Roosevelt "Ted" Halley, Executive Director of the SC Employment Security Commission.³

"We fully support this unique partnership of government entities," said DHEC Commissioner C. Earl Hunter. "Electronic handling of applications provides a more effective and efficient use of staff resources as DHEC strives to maintain current levels of service. In the long term, this process will allow us to enhance our capability to anticipate, recognize, prevent and respond to environmental and public health issues."³

"The level of public and private partnership in this SCBOS endeavor is truly historic. It speaks to the importance of the project, the quality and dependability of the end-product, the commitment to increasing productivity, and a true desire to provide an environment that helps businesses to grow and prosper in this state," said S. Hunter Howard Jr., President and Chief Executive Officer of the South Carolina Chamber of Commerce.³

² South Carolina Government Management Information Sciences May 2005 newsletter, <http://www.scgmis.org>

³ The South Carolina Business One Stop Press Release 05/17/05, <http://www.scbos.com>

SCBOS Announcement



Immediate Results

In the first eight weeks after its availability on May 24, 2005, SCBOS has delivered the following results:

- ◆ 2,586 SCBOS Users
- ◆ 2,557 Licenses Applied For
- ◆ 1,967 Licenses Approved
- ◆ 592 Businesses Created

SCBOS Growth

SCBOS Phase II has been launched by the State of South Carolina, with TiBA Solutions providing project management, analysis, and design and development services. The initial project will 1) integrate existing businesses into SCBOS to allow them to manage their licenses, permits, and registrations online similarly to the capabilities available to new businesses; 2) add renewal capabilities; 3) add the ability for a business to update its demographics and licenses, permits, and registrations; and 4) include additional licenses, permits, and registrations and additional agencies.

THIS PAGE INTENTIONALLY LEFT BLANK.

*i*SOLUTIONTM
Methodology 