PGA

The PGA of America
100 Avenue of the Champions
Palm Beach Gardens, FL 33418

Phone: +1 (561) 624-8400
Web: www.pga.com

CEO
Joe Steranka

IT Director
J. Sean Walker

Employees
Faculty & Staff: ~*300*

ROI Study Highlights

- **234% ROI in one year**
- **18% IRR in one year**
- **$252K Initial Investment**
- **Payback within 3 months**
- **$366K Net Savings in first year**

Business Benefits

- **Increased ticket sales, elimination of "artificial" ceilings**
- **Reduced shipping costs by reducing pre-printing and mailing of tickets and credentials**
- **Accurate data reduced catering guarantees**

Study Scope

- **Championship Management Systems (CMS)**
  - **Adobe ColdFusion 8**
  - **Adobe Flash Platform**
  - **Adobe AIR**

The PGA of America generates business value through increased productivity and automation with Adobe ColdFusion 8 and Adobe Flash Platform—*realizes a 234% ROI*

Executive Summary

The PGA of America (PGA) is the world's largest working sports organization, comprised of 28,000 golf professionals and experts. The PGA serves millions of people throughout 41 PGA sections nationwide and, since its founding in 1916, has enhanced its leadership position by growing the game of golf through its premier spectator events, world-class education and training programs, significant philanthropic outreach initiatives, and award-winning golf promotions. Furthermore, the Association's career services, marketing and research programs enable PGA professionals to maximize their performance in their respective career paths, showcasing them as experts in the game and in the $76 billion golf industry.

The championships and golf promotions created and delivered by the PGA are considered the best of their class—but they are also logistically challenging undertakings. The complicated task of coordinating and controlling access for all the authorized attendees (volunteers, spectators, journalists, business partners) and optimizing services (security, catering, logistics, bussing, etc) across a venue the size of a golf course is fraught with the potential for problems. In particular, knowing at any given time during an event the actual, current attendance is of extreme importance to smooth operations and facilitate logistics—and it was also previously impossible.

In 2007, the PGA sought a way to overcome this and other data-related obstacles and determined to develop a comprehensive event management system. The PGA resolved that a rich internet application with data-enabling capabilities was required to tie together disparate data sets in an intuitive, easy-to-use and easy-to-deploy solution given the mobility of events, rented equipment and extensive volunteer staff.

After careful thought and consideration, the PGA decided to use Adobe ColdFusion to build an end-to-end "Championship Management System". The PGA selected Adobe ColdFusion as it would allow it to leverage existing licenses with minimal incremental investment, an extensive and knowledgeable in-house talent-base skilled in the proven Adobe technologies and produce a rich internet application in short-order—in PGA's case within three months. Using Adobe ColdFusion 8, the PGA IT team was able to create a comprehensive event management solution that is easy for untrained volunteers to use and leveraged ColdFusion 8's integration with Adobe AIR, a cornerstone of the Adobe Flash Platform, to provide mobile and even off-line tracking of (and accessibility to) accurate event data such as real-time attendance statistics. This has greatly improved the PGA's wealth of customer and event data. Now, with the Adobe ColdFusion 8 and Adobe AIR powered Championship Management System, PGA is able to streamline and accelerate event processes which have helped the organization to increase ticket sales and reduce waste, increasing the profitability and visibility of its events while enhancing the spectator experience and reducing staff stress.

Using Adobe ColdFusion 8 and Adobe AIR, the PGA has transformed the planning and execution of its signature golf events and increased productivity and profitability, resulting in an impressive 234% ROI in just one year.
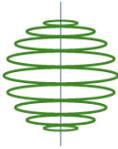
PGA

Challenges

- **Required a fast, innovative platform that could be up and running quickly**
- **Because events are in different places, needed an independent, mobile solution**
- **Cost-efficiency paramount: limited resources (human and otherwise) available**
- **Required an integrated, supported solution – need to leverage in-house skill set, no time to test unproven solutions**

The PGA of America Business Challenge—*Leveraging high-performance, mobile event management to deliver the ultimate spectator experience*
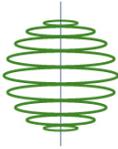
The PGA of America (PGA) is the world's largest working sports organization, comprised of 28,000 golf professionals. They are the recognized experts in growing, teaching and managing the game of golf and serve millions of people throughout 41 PGA sections nationwide. Since its founding in 1916, The PGA of America has enhanced its leadership position by through its premier spectator events, world-class education and training programs, significant philanthropic outreach initiatives, and award-winning golf promotions. Furthermore, the Association's career services, marketing and research programs enable PGA Professionals to maximize their performance in their respective career paths, showcasing them as experts in the game and in the seventy-six billion dollar ($76B) golf industry.

The championships and golf promotions created and delivered by the PGA are considered the best of their class. However, beneath the seemingly smooth surface, each event is a small logistical miracle: coordinating potentially hundreds of volunteer workers and thousands of spectators, journalists, security personnel, catering and other necessary services, plus business partners—as well as the players themselves—across a very large, wide-spread outdoor venue, is no small feat indeed. And regardless of location, the running of each event would always present some of the same kinds of hurdles, such as: shuttling "will call" tickets to the correct entry gates; pre-printing and shipping credentials for journalists and other professional invitees; understanding which and how many volunteers actually turned out and which sponsors had already made their payments; and knowing at any given time the event's actual, current attendance and where the visitor traffic was heaviest, in order to optimize staffing and services.

Most of the PGA's difficulties were ultimately due to challenges in capturing, consolidating and using event data—most critical during the event itself when strategic decisions would have to be made on the spot in the absence of up-to-the-minute information. The PGA realized that static, backward-looking reports and individual spreadsheets showing, for example, ticket pre-sales *estimates* or catering *projections* were simply ineffectual for operating a large-scale, dynamic event during which such questions as "How many more walk-up tickets can we sell?" and "Do we need to increase or decrease our catering services?" are a routine and normal part of doing business.

There had to be a better way—*and it had to be mobile*

In 2007, the IT team at the PGA took the lead in looking for a way to use technology to overcome the disadvantages of the PGA's manual and disparate event planning and execution processes. The PGA sought a fast, comprehensive solution that would automate essential parts of the event management and simultaneously help them to capture, track and report on those data. The PGA also needed a quick, failsafe solution that would not require significant new investment or extensive user training and support. Wanting to leverage their existing skills, the IT team turned to a proven solution that they already had used for various PGA internet applications: Adobe ColdFusion. Combining this toolset with Adobe AIR to power the data collection / scanning functions, as well as to provide mobile, even off-line system availability—for the PGA, tantamount to business continuity—the IT team was able to quickly produce its proprietary "Championship Management System" (CMS). This end-to-end event management solution required only a nominal initial investment and was up and running within three months from agreeing on business specifications to "go-live" release—at which point it immediately began producing business benefits.

PGA

> "*With CMS, we can better coordinate everything from ticket sales to concessions and catering: now it's all seamlessly linked for less waste and more profit.*"
>
> — Michael Balat,
> Championship Events,
> the PGA

Selection Criteria

PGA chose the Adobe software to develop its Championship Management System because of these capabilities:

- **Trusted partner since 1999**
- **Easy to learn and use**
- **Quick development (3 mos.)**
- **Browser-like solution with desktop lock-down control**
- **Connects seamlessly to databases both locally and remotely for data capture and background DB updates background**

One of the keys to this incredible success was the capability provided by Adobe ColdFusion 8 and Adobe AIR to enable onsite processing of electronic entrance documents—virtually eliminating the PGA's need to produce paper tickets at all. This strategic automation has furthermore made it possible for the PGA to shift the focus of its event management from coping with physical logistics to process- and information-driven value addition.

Combining the components of ColdFusion 8 and AIR, the PGA now has access, in real time, to accurate and detailed information on event attendance which has not only improved reporting to course partners but has also helped it to optimize event catering, merchandising and logistics such as bussing and security—as well as making the management of its volunteer workforce much more effective. Prior to the implementation of the CMS, the PGA lacked the ability to track and report on its volunteers and suffered a gap in knowledge about their access to events, shift participation and other specifics. Not only does the CMS help to track this vital information, but it can also be used by the volunteers in streamlining their work. The intuitive, browser-like user interface enabled by Adobe AIR requires only about ten minutes' training—a huge benefit when the bulk of the workforce at every event is potentially new, and yet the Adobe AIR component provides the PGA with complete desktop lock-down control that would not be possible with, browser-based application. This control is especially critical given the dynamic nature of events—rental equipment, volunteer staff and need to minimize support issues.

In selecting Adobe ColdFusion 8 as the platform for the new CMA application, the PGA was able to leverage its existing IT talent and their deep experience and knowledge with the Adobe environment. Having utilized ColdFusion technology since 1999, the PGA IT team had complete confidence it could produce a feature rich application with an intuitive interface in as little as three months. By upgrading to ColdFusion 8, the PGA was able to leverage integration capabilities with Adobe AIR. The PGA team was able to quickly code for data integration (e.g., with its Oracle system), data capture (using local database and background synchronization), and data publishing (e.g., automatic attendance reports) that would not have been possible otherwise given the aggressive delivery timeline.

### Leveraging the ColdFusion 8 platform for greater scalability, performance and efficiency

ColdFusion 8 enables the PGA to run their CMS application on VMware which provides virtualization, further leveraging existing hardware resources to accommodate the spikes in data requests associated with PGA events.

The 64-bit support of ColdFusion 8 allows the PGA to better utilize and allocate memory resources; the allocation of increased memory to ColdFusion results in greater application performance. Increased addressable memory allows the PGA to scale out faster without having to add additional hardware or ColdFusion instances online.

Using tools native to the ColdFusion 8, the PGA was able integrate back-end data from its existing Oracle structure, including the ability to capture and feed the rich data back to operational systems for its dynamic customer database.

Business Benefits—*process optimization*

ColdFusion 8 and AIR are helping the PGA to optimize its golf events business processes. The Championship Management System offers scalability, reliability and performance well beyond what was possible previously. The automation of certain procedures (e.g. online ticket sales, scanning of bar-code entrance credentials at the gates) not only speeds up the process for patrons, alleviating stress for volunteers and staff, it also reduces input errors, saves resources and delivers reliably high-
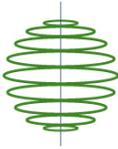
PGA

- Now that the PGA has a way to accurately count event attendees, it can more precisely order services to avoid waste and unnecessary expense, for example catering, insurance, security, etc. Furthermore, since it can know at any given time how many guests have actually turned up and where they have entered, it can better manage services to cope with high traffic areas, or choose to lift the ceiling on ticket sales – meaning that walk-up customers are not turned away disappointed. All these measures help to optimize the profitability of each event.

- About 90% of all tickets are sold and ordered online. By distributing tickets electronically as well, the PGA saves the paper, storage, handling, printing, shipping and disposal costs associated with physical tickets. Furthermore, many of the marketing communication activities can now be conducted, tracked, and reported electronically through the CMS. Due to these savings, marketing costs alone have been reduced by $10,000 to $15,000 per event.

Strategic Benefits—*transforming event management for immediate customer satisfaction*

Adobe software has helped the PGA to strengthen its core business values – enhancing the overall experience at its golf events and making them more professional and more accessible to more people. Not only the patrons but also the volunteer workforce benefit from the streamlined planning and execution processes:

- With Adobe AIR, the CMS application is able to run against a local database with background updating which provides both on- and offline Point of Sale (POS) system to the PGA. This capability is critical to enabling electronic distribution of pre-sold tickets in addition to onsite sales all without limitation of connectivity.

- The desktop control allows the PGA to better content with a very large temporary workforce. The CMS system leveraged the ColdFusion 8 platform to produce a rich internet application that is not only intuitive and easy to use, but also has built-in accountability: security and access levels that are assigned by management to prevent unauthorized terminal use.

- With Adobe ColdFusion 8 and Adobe AIR, the PGA was able to produce an application that is platform agnostic and currently operates on hand-held mobile devices. Using Adobe the PGA has avoid many of the traditional pitfalls associated with a dynamic environment which relies heavily on rental equipment and oftentimes results in a support challenge.

- Using the background updating feature of AIR, the CMS system continues to function even if there is a drop in internet connectivity—CMS will not go down but will synchronize itself once connectivity is restored—ensuring continued operations. This provides the PGA with flexibility, allowing it to scan e-tickets and granting patrons prompt admittance to events at any gate they choose, since all tickets are checked electronically against the central system regardless of access point. This eliminates the delays previously associated with shuttling a paper ticket over to meet the guest which, in turn, enhances the customer experience while freeing up personnel to do other important tasks.

Strategic Benefits

- **Online/offline capability to ensure business continuity even in the absence of WiFi**
- **Rich interface with desktop control / browser lock-down prevents misuse and minimizes support issues – critical with a large (3,500) volunteer event workforce**
- **Flash movies useful for training and improves user interface**
- **Dynamic ticketing delivery—PGA is now able to assign tickets for pickup anywhere, solving logistical challenge of physically running tickets out to meet the guests**

Quantifying the Adobe Investment—*saving time and money*

Thoughtware Worldwide's analysis showed that the Adobe solution provided the PGA with business benefits associated with automation and efficiency—namely, improved productivity, the avoidance of costs and waste, and more effective event planning and management—all while increasing revenue and ensuring customer satisfaction.
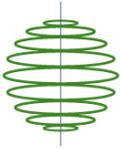
PGA

"There isn't much that Adobe's ColdFusion 8 and AIR didn't allow us to solve."

— David Charles,
Director PGA
Championships,
The PGA

Economic Benefits

- **Reduced marketing spend through electronic media use**
- **Increased ticket sales—removal of "artificial" caps**
- **Reduced waste: printed ticket & catering overages**
- **Optimized PGA staffing at call centers, reduced data entry, real-time payments**
- **Eliminated printing and shipping of press credentials**

Adobe—*Small Investment, big impact*

- The total investment in ColdFusion 8 and AIR, including initial and upgrade (19.9%), maintenance (0.2%), Adobe Consulting (0.2%) and hardware (12.1%) together constitute less than a third of the overall investment
- External consulting costs account for another 11.9% of the total project expenditures
- Over half (56%) of the investment can be attributed to internal labor needed to develop, launch and manage the project
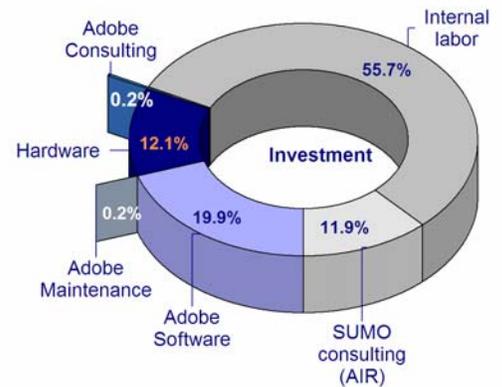
Operational Benefits—*productivity increases due to high efficiency through improved data capture, sharing and reporting*

The Championship Management System, powered by Adobe ColdFusion 8 and AIR, has contributed substantial operational benefits to the PGA's business. In general, these benefits fall under the category of increased productivity: more ticket sales, improved customer service for the same or less effort, faster processing of payments, continuous, uninterrupted access to the system and a new degree of control over—and knowledge of – who is granted entrance to events. These and other productivity gains have resulted in the permanent increase of event profitability.

Increased productivity

- Now that it can manage its events at a level of accuracy never before possible, the PGA can sell 10,000 additional tickets to each event, not only positively impacting revenues but also supporting one of the PGA's strategic missions, as more people are able to experience the excitement of world-class golf

22%
Sales Increase

Ticket Sales

□ Pre-Adobe ■ Post-Adobe
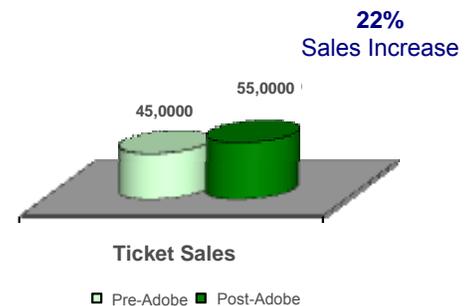
Increased efficiency, increased customer service

- Recipients of "will-call" and complimentary tickets used to wait an average of 15 minutes for their paper tickets to be shuttled over to them, if they arrived at a gate different from where they were expected. With Adobe AIR making e-ticket scanning possible, all guests are in the system, regardless of access point, so they don't have to wait to be allowed in – and the PGA doesn't need to divert manpower to this task

15X
Improvement

Wait Times

□ Pre-Adobe ■ Post-Adobe
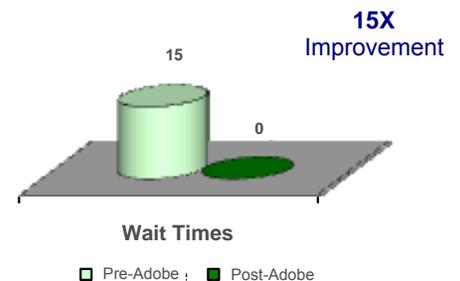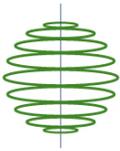
PGA

"Before, we had to enter data into three different systems; now it's a streamlined process: we enter it once at the source and the Adobe system integrates it across our organization. This greatly reduces input errors."
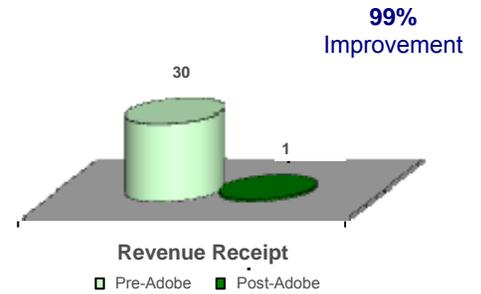
— David Charles,
Director
PGA Championships,
the PGA

Increased liquidity
- The previous solution used an invoicing system for revenue collection which introduced delays in receipt of payment by at least 30 days; with the new CMS, payment can be effected immediately by credit card

99%
Improvement

30

1

Revenue Receipt

☐ Pre-Adobe   ■ Post-Adobe

Fraud prevention
- The Adobe solution provides PGA with the ability to track both ticket sales *and* ticket usage; before, there was no way to track a ticket once it was printed and the PGA had to set artificial attendance (and ticket sales) ceilings

~100%
Improvement

100

0

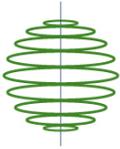**Fraud protection**

☐ Pre-Adobe   ■ Post-Adobe

Benefits Achieved from PGA Investment in Adobe software

The investments in ColdFusion 8 and AIR have provided the greatest value around ticket sales. Most other revenues generated are as a result of sales and the reduction of costs due to increased management and visibility.

- **Increased revenue**: Increased sales of tickets to PGA events account for 57% of the economic benefits of the Championship Management System powered by Adobe

- **Cost reductions**:
  The CMS also makes it possible for PGA to reduce costs associated with printing and mailing of applications (19%), as well as to virtually eliminate the printing of tickets (5%), accounting for 24% of the total savings realized

- **Waste avoidance**: 6% of the overall benefits can be attributed to the PGA's new ability to more accurately order catering

Operational Benefits
- **Increased productivity with greater accuracy allowing for increased ticket sales**
- **Increased efficiency—"will call" logistics are no longer a challenge as all the information is in the system**
- **Increased liquidity—faster invoicing, payment collection and reporting to improve cash flow and profitability of event management**
- **Reduced fraud—ability to track sales and usage in real-time**

Reduced Catering 6%
Reduced Ticket Printing 5%
Ticket Manager
Increased Ticket Sales 57%
Total Costs Reduction 19%
ColdFusion License Avoided 8%
Benefits / Savings

PGA

> "*With CMS, powered by Adobe ColdFusion and Air, we have eliminated the printing and mailing of credentials in advance of events—now we just email patrons a bar-code that gets shown at the gate.*"
>
> — David Charles,
> Director
> PGA Championships,
> the PGA

FINANCIAL MEASUREMENT EXPLAINED

ROI (Return on Investment)
- Quantifies how much profit or cost savings will be achieved as a result of the investment
- Discount any future costs/benefits by the Weighted Average Cost of Capital (WACC)
- WACC is an average cost of capital using a combination of equity and debt borrowing
- Demonstrates the overall value of an investment; e.g., is breakeven achieved (100%) or is positive value achieved (101% +; investment plus value)

WACC (Weighted Average Cost of Capital)
WACC = E/V x Re + D/V x Rd x (1-Tc)
- Re= Cost of Equity
- Rd= Cost of Debt
- E =The market value of the firm's equity
- D =The market value of the firm's debt
- V =E + D
- E/V =Percentage of financing: equity
- D/V =Percentage of financing: debt
- Tc =The corporate tax rate

IRR (Internal Rate of Return)
- Discounted cash flow measure of valuation and investing. IRR is the true interest yield of an investment
- Net benefits restated as an interest rate
- IRR demonstrates how quickly an investment generates positive net benefits

Summary of the PGA Return on Investment (ROI)

The power and dynamic flexibility of Adobe ColdFusion 8 and Adobe AIR have provided the PGA with a first-class, browser-like event management system that offers continuous, mobile, environment-independent availability.

The Adobe solution has delivered an ROI of 234% in one year and an internal rate of return of 18%, confirming the quality and value of the investment. As illustrated in the chart below, the benefits of the Adobe solution well exceeded expenditures, reaching breakeven within three months.

Break Even Analysis

Thousands

$700
$600
$500
$400
$300
$200
$100
$-

Year 0   Year 1

◆ Costs   ✦ Benefits
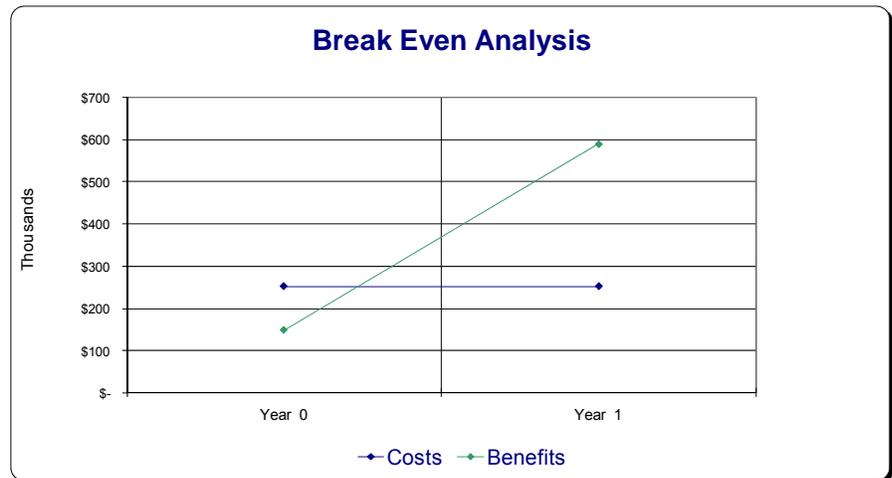
Overall, the Adobe products have helped The PGA of America to automate its event management process, transforming it from a manual, labor-intensive and crisis-prone operation to a technologically advanced, reliable and efficient system. This has increased revenues and helped the PGA to adhere to its core business principles while providing the foundation for valuable future customer data insights.

Draft

PGA

Adobe

The PGA Has the Opportunity to Harvest Additional Value

During the course of the Thoughtware Worldwide study, the PGA team identified a number of additional areas where it could maximize the benefits realized from its investment in ColdFusion 8 and AIR. Leveraging its highly successful Adobe partnership, PGA has the opportunity to harvest additional value by:

- Increasing automation to feed data into Oracle financials, providing the capability to add straight-through payment processing
- Increasing personalization by leveraging data collection to tailor each customer's experience to his/her characteristics, preferences and history
- Leveraging business intelligence to improve targeting and ticket sales based on a detailed understanding of the data collected from past events

Summary

Adobe products have enabled the PGA to realize its vision of growing and elevating the game of golf. The PGA's Championship Management System, powered by Adobe ColdFusion 8 and Adobe AIR, has not only increased the productivity and profitability of the entire event lifecycle but has also contributed substantially to improvements in the spectator, volunteer and staff experience.

Today, PGA has a first-class, scalable solution which has increased data capture, reporting and collaboration, but has also produced real-time, accurate information which improves the PGA's overall decision making for critical event logistics. With Adobe AIR, the PGA has been able to extend the application and data capture to hand-held devices, improving data quality, availability and reporting.

With Adobe ColdFusion 8, the PGA is able run their Championship Management System (CMS) application in a virtual environment using VMware; address and practically double their performance with the ColdFusion 8's 64-bit capability and quickly add rich functionality protecting its investment while constantly evolving its CMS without additional training or headcount, enabling the PGA to continuously innovate and stay competitive.