

## Case Study: Sports Entertainment & Leisure Club Management

### About the Client

The client provides sports entertainment facilities that feature a golf game that uses patented microchip technology inside golf balls. The client has currently thirteen locations worldwide - ten in the United States with eleven under construction, and three in the United Kingdom. The company is headquartered in Dallas, Texas, and serves more than 2.7 million annual visitors worldwide.

The golf game played in the client's facilities is a point-scoring game that is played with real clubs and golf balls. Players tee off from a driving bay onto a landscaped outfield with targets ranging in distance from 20 to 260 yards. Players receive instant feedback on how far they have hit a shot and are allocated points based on distance and accuracy.

### Business Processes & Systems

Each facility offered by the client provides gaming bays with patented RFID based gaming equipment (balls, clubs, etc.) and proprietary games management systems. The game features RFID chips in each golf ball that tracks a shot's accuracy and distance while awarding points by hitting targets. End users purchase playing cards or get membership cards with magnetic stripes, occupy a bay and start playing.

A game is initiated by swiping the card and selecting options on weather proof, daylight viewable, touch screen devices. Based on the game selected by the user, golf balls are dispensed automatically from a ball dispenser. Golf balls struck by the user are scanned by an antenna at the target area and the data is read by a reader. The information about the antenna and the ball (distance, point, etc.) is sent back to a server for processing. Scores are calculated automatically based on the game type and zones in which the balls lands while playing. RFID sensor clusters installed in the ground (as marked zones) are wired to a server in each facility where all readings are aggregated. Apart from games, the facilities also offer a wide range of food and beverages for end users.

To manage its playing bays, members and games, the client uses a game information management system called as "Venus". Management of information related to food and beverages is done using another system called "Focus".

The data from multiple facilities are sent to a central management centre, where the information is used for generating analytics related to player behavior, demand management, marketing campaigns, etc.

### Business Challenges

At the time initiating the engagement with Experion, the client had only three locations open in the United States. With a handful of facilities under construction and ready to open at that stage, the client was looking out for able and experienced technology partners to support their IT initiatives.

The Venus system, which runs on LAMP stack, was custom developed with the help of a third party vendor and managed in-house by the client. One of the key challenges for the client was to transition the system from existing "ball based" pricing mechanism to a "time based" model. The change in pricing model was mission critical and revenue impacting in nature; and a major shift away from its existing business / IT processes.

Additionally, the client was looking for help and support in the following areas from a technology standpoint:

- Technical support for maintaining the Venus application
- Database analysis, cleanup and documentation
- Technology recommendation to improve system performance

- Data consolidation from disparate systems
- Reporting and Analytics
- Mobile application development, etc.

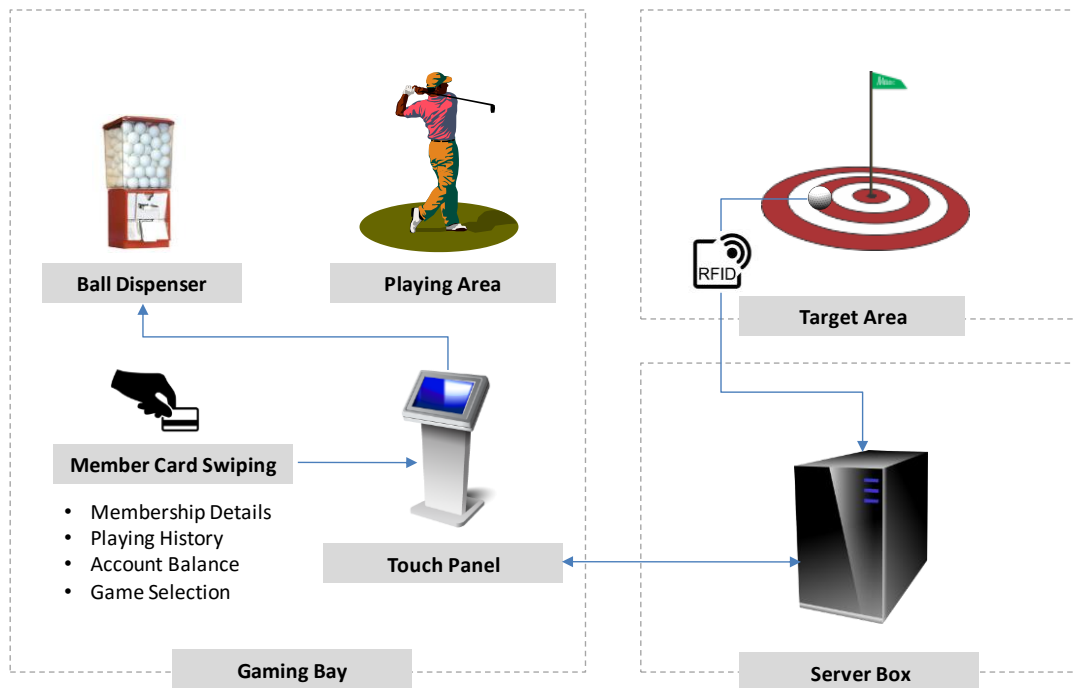


Figure 1: Schematic overview of Venus games information system



Figure 2: End user display panel

### Engagement Highlights

Experion took up a string of projects during the engagement with the client. A team of developers (web/ mobile), testers and technical architects were assigned to take up individual projects from the client. A dedicated Project Manager ensured seamless communication with the client and work allocation & management of offshore resources. For specific projects, technical resources were placed on-site at the client's headquarters in the US to work in close coordination with their business/ IT teams.

Some of the key projects taken up and successfully delivered by Experion during the engagement with the client are detailed below:

1. Pricing Module

For effective utilization of gaming bays and to ensure revenue maximization, the client wanted to move away from its existing ball based pricing model to time based pricing. This required a complete rewrite of the pricing module in Venus application. This was one of the first projects executed by Experion for the client and involved senior technical resources being deployed onsite, to work closely with their internal IT team. The development was done from Experion's development centre in India. After extensive trials, the solution was successfully deployed on one of the new locations of the client and then extended across all locations in a phased manner.

2. Venus Maintenance

The client had identified enhancements to Venus application as well as some issue fixes. This was also taken up by Experion and developed from offshore. A team of developers, testers, technical architect and a Project Manager was dedicated to support the client's maintenance requests.

3. Focus Data Consolidation

The food & beverages transactions in each of the client locations are managed by an application called Focus. The data in Focus for each location is exported in XML format on a daily basis. Experion developed an application called Focus XML Parser web application to fetch data from XML files and insert into a MySQL database. An XML Web Service application was also developed which uploads the files of each facility to an SFTP site at a regular interval. The project helped the client consolidate data from Venus & Focus applications across all its global facilities.

4. Business Intelligence

Automation and streamlining of the data consolidation process was an important milestone for the client to initiate an internal drive to generate analytics related to games, bay utilization, food & beverages consumption, peak hours, etc. Experion helped the client to process Focus and Venus databases to create analytical reports using tools such as QlikView Reports. Some of the reports were also developed using PHP.

Intelligence derived from these key reports was used by the client's business teams to arrive at business improvement plans and to link business decisions with revenues. Marketing campaigns were also designed based on inputs from such reports.

5. Mobile Application Development

One of the key solutions developed for the client by Experion included a mobile based solution for members of the client facilities. The app was required for end users to access personal scores, leader boards, information about games/ facilities, menu details, etc. on their mobile devices. Most of the functionality was available on the client's web based member portal, but was not developed using a service oriented architecture (SOA).

To overcome this challenge, Experion first developed common web services for usage with the member website and mobile applications. The leader board feature, which was not available in the existing application, was custom developed and made available to other applications over web services.

Simultaneously, the mobile team from Experion developed native versions of the mobile application in iOS and Android platforms. The functionality supported by the mobile application included:

- Easy access to player leader boards
- Option to change TV channel aired in the playing bay

- Access personal game history and membership details
- Social media integration for sharing ball-by-ball game scores with friends
- Ability to instantly add value to the user's playing card (using credit card)
- Get contact info and directions for each location
- Get up-to-date information on upcoming events, news, and offers

Currently both the iOS and Android versions are live on respective App Stores.

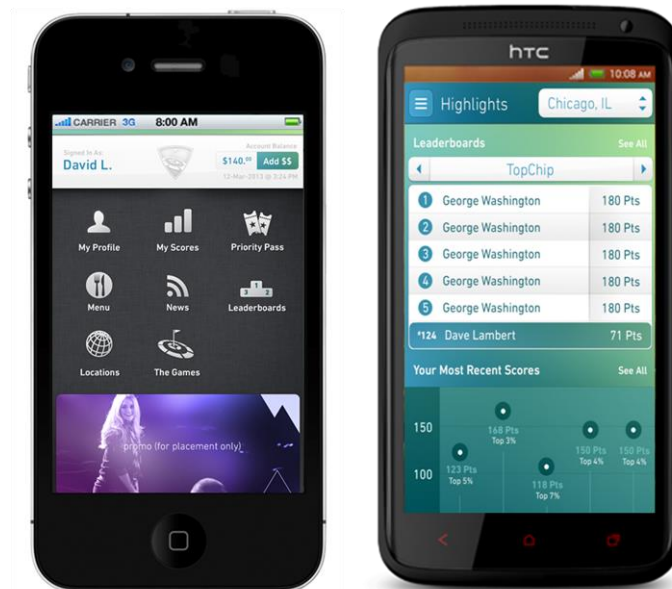


Figure 3: Member's Mobile Application

### 6. Other Key Projects

- Database referential Integrity Analysis: Performed technical analysis on Venus system database to determine missing constraints on database foreign keys. Experion provided a detailed analysis report at the end of the project, with specific recommendations to improve the database performance.
- Augmentation for Data Mover Project: The objective of this project was to centralize the client's membership data, so that it could be retrieved by all locations. This was accomplished by creating a global ID (made up of a combination of site id and member id) for members.
- UML Diagrams for Venus Reception: The client had a need to document the UML structure and behavioral (activity diagrams) for Venus Reception application. Experion reverse engineered these models from Venus code and created detailed documentation for each.
  - Created Class Diagrams from PHP Source using Enterprise Architect
  - Created Activity diagrams illustrating the logic flow for use cases
  - Make recommendations for the Venus application to ensure transaction integrity for all financial transactions from reception.

### **Business Benefits**

The partnership between Experion and the client started just at a time when the client was aggressively pursuing plans to expand its operations across the United States. Over the course of the engagement, Experion has successfully completed and delivered key projects that helped the client manage its business growth.

- The pricing module changes that Experion delivered has resulted in revenue improvement of over 30% across various locations. The change has also resulted in optimized bay turnaround times, reduced customer waiting period and overall increase in customer satisfaction.
- Since Venus application was developed by a third party vendor with very little documentation in place, the client had internal challenges to manage and enhance the application. An expert team from Experion could tackle this challenge within a short time period and deliver the changes with exceptional quality.
- Enhancements to Venus application, which were otherwise held up due to lack of support, were taken up for development by Experion. This led to operational improvements and usability enhancement of the system.
- Data silos were eliminated after consolidation of data from Venus and Focus systems. Experion made sure that the data from all client locations were available centrally for further processing.
- Business improvement plans and marketing decisions were designed based on accurate and up-to-date inputs derived from BI reports. Availability of reports also helps the top management of the client to compare performance against different locations, identify trends and take timely corrective actions.
- Mobile applications provided an easy and convenient option for members to access game related data and get updates directly. Since players can now compare their performance against leader boards, it provides an option for users to continuously improve their game play.