

Saints alive

IT systems integration at Southampton FC's St. Mary's Stadium

Important decisions were made in selecting the most suitable IT packages to maximise the stadium's operational effectiveness and improve the match day experience for Saints fans



Andy Robinson, J. Brand Ltd, UK

When Southampton FC wanted to turn their dream of a new 32,000 capacity stadium into reality, they turned to J. Brand Ltd to provide the expertise in designing and delivering the necessary, integrated IT infrastructure. The £32m (US\$46m) Friends Provident St. Mary's Stadium – the replacement for the Dell, the home of 'the Saints' for over 100 years – would double the capacity at home fixtures. The amount and complexity of the IT infrastructure at the new ground would, by comparison, increase exponentially.

A modern stadium requires modern IT systems. There is little point in spending millions on a new superstructure and not installing the necessary IT to help the club realise the building's true potential and allow them to exploit the new opportunities it offers. It is also important to ensure as far as possible that the systems installed offer the users the best return on investment in terms of operational effectiveness, future proofing and also from a purely financial perspective.

The systems employed should follow the same characteristics as the ideal soccer player – fast, strong, adaptable, offer a

tant to have available the best advice for design, procurement and implementation of IT in this rapidly changing technical world, to ensure Southampton FC acquired systems that offered the best fit. J. Brand were an integral part of the team in delivering the stadium."

The company's consultancy consisted of three important phases:

- *Design* – encompassing the technical aspirations of the club;
- *Procurement* – matching the design requirements to the marketplace;
- *Delivery* – project management of all aspects of each IT package implementation, working in close co-operation with the other agencies and IT suppliers involved with the building of the stadium, ensuring a co-ordinated approach at a critical phase of the project.

The scope of the IT project consisted of a number of IT packages. These included turnstile monitoring, access control, PCs and peripherals, RF, UPS, LAN infrastructure, scoreboards, TV distribution, telephone system and EPOS.

It was agreed that the company would also maintain a 'watching brief' to monitor the works and standards of the other systems within the stadium that were not specifically part of the above remit, reporting, when necessary, any concerns that may impact the club's future operation.

The specifications for each of the IT systems were produced and put out to competitive tender. Following receipt of tender responses, J. Brand formulated reports for the club on each package, and

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On August 11 2001, a sell-out crowd of 32,000 Saints fans were expected to arrive at St. Mary's Stadium for the Premier League club's inaugural fixture at their new home against Espanyol. With the sale of the Dell for property development, the prospect of any delay with the new ground's completion would have far-reaching consequences. The end of the 2000/01 season signalled the end of the Dell, and there would be no possibility of a return should the new stadium falter. Put simply, the venue had to be ready in time.

good disaster recovery, last for a number of years, integrate well and not have unrealistic running costs.

Delivering the IT package

UK-based J. Brand Ltd were contracted by Southampton FC (SFC) to act as independent IT consultants, to ensure that this 'ideal player', was ready for action for the Espanyol match and beyond.

"St. Mary's Stadium was a massive undertaking," says club chairman Rupert Lowe. "It was therefore extremely impor-

recommendations were made as to the most suitable option based on adherence to specification and budget available.

Tim Oldershaw, the company's technical director, was a key member of the project team. He designed the network architecture in accordance with the club's requirements, working closely with the preferred supplier – Scalable Networks Ltd.

Alan McGibbon, managing director of Scalable Networks, says: "It was crucial that the overall technical authority for the project had a clear understanding of all of the disparate system requirements, from structured cabling through to sophisticated ticketing and security applications. J Brand demonstrated a clear and detailed understanding of all the aspects of the project and this enabled Scalable Networks to 'tune' the network infrastructure to best effect for Southampton FC."

Large display installation

It was decided early in the design process that as many of the stadium's IT systems as possible would utilise the venue's structured cabling network. This would allow for uniformity of cabling throughout and also easier management, as any alterations to those systems that used the Cat6 structured cabling could be achieved by patching at one of the four Rack Rooms within the building.

The four Rack Rooms (one at each corner of the Stadium) would provide the required resilience for the network both technically, and geographically. Key equipment such as the AS400 for the stadium's ticketing system was duplicated and mirrored in opposing Rack Room locations. Disaster recovery options would therefore be available if the worst did happen.

The installed network is based on two Extreme Networks Summit 7i core switches and 17 Summit 48 edge switches, with the topology giving a meshed four Gbps backbone. These switches are resiliently configured using Extreme's EAPS technology, which provides fast recovery in the event of link, port or switch failure, thereby ensuring maximum uptime. In addition, Extreme's sophisticated QoS support at Layer 2 was critical in order to guarantee the low-latency, predictable throughput required by CCTV and multimedia applications.

Southampton FC wished to improve on the visual offering to the supporters that was available at the Dell. Following a trip to the USA to review the most advanced tech-



nology available, J. Brand recommended ProStar Screens from Daktronics. The Daktronics offer consisted of two 34m² ProStar screens at 23 pitch LED complete with one Venus 7000 video display control system and two V-Link direct video processor controls. Two screens were eventually installed, one at either end of the stadium, offering visibility from all areas of the ground.

The Venus 7000 display controlling system gives real-time video and taped video at 60 frames/sec (NTSC) with animation rates of 30 frames/sec with ability to merge or include frames or sequences into existing sequences/video.

Meanwhile, TV distribution was also to form a key part of the 'offer' available to fans and corporate guests alike.

The specification included a TV position in all of the key offices within the stadium complex, as well as within the

The project consisted of integrating a number of IT packages, including turnstile monitoring, access control and display systems, designed to deliver a hi-tech stadium for the English Premiership club

concourse and hospitality lounges and each of the 47 hospitality boxes.

Southampton FC also wished to utilise targeted selling within the new 3,500ft² retail unit within the stadium. TV positions in strategic locations within the retail outlet were detailed to make this possible.

Some 123 TVs, and one plasma screen were installed by SmartComm Group Ltd. The system is configured to show specific output to particular TVs, or groups, at specific locations automatically. This was key, as it allowed all of the distributed TVs to be managed from one central location. The predetermined selection requirements

from the club comprised from the available options of DVD, video, satellite and terrestrial channels, plus the option for live input from 'outside broadcast' cameras.

The system used four MediaStar distribution hubs to distribute and manage the video services, again utilising the structured network already installed. Centralised control of the system is achieved by using the NetLinks AMX control system, which can be operated via any networked PC. This addresses the sheer scale of the task of managing the system as even on/off functions can be centrally controlled.

Managing security and operations

Access control and turnstile monitoring were key systems for the club. The former would allow it to manage the security of the large number of lounges, offices and corridors in the new stadium, while the latter was a prerequisite to the venue's safe operation.

Newleaf Ltd. fulfilled both requirements with their Sentinel Turnstile Management system and TDSI's Ultragard

Access Control system. Both systems were capable of utilising the stadium's structured cable network thereby simplifying the installation work and cost.

Sentinel provides crowd ingress and 'flow against time' data, which is displayed both numerically and graphically. Totals for individual turnstiles, blocks of turnstiles or any combination thereof are calculated on a continuous basis. Histori-

cal data is also recorded which allows the stadium operations team to 'second guess' the trends of an event and allows them to prepare in advance.

taining a level of security throughout. Authority levels are set via the administrator, and the pre-issued ID cards allow access to authorised doors via proximity readers located near to the door. Door operation is managed by either an electronic strike plate that works with the latch snib – installed as part of the door furniture, or a magnet at high level – depending on the door type. Both operations release

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Data is collected from each turnstile via an enumerator that is activated with every turn. This is then collated by a Process Logic Control (PLC) unit. The PLC provides a numerical backup display to the Sentinel GUI that displays the data graphically via any networked computer. The PLC therefore gives the stadium operations team a failsafe in case of computer failure, an important consideration for such an important system.

In addition, Sentinel's GUI can be utilised to manage support staff within the stadium by location and also by qualifications. The system is also capable of automating payment calculations for personnel through integrating with an accounting package.

The Ultragard Access Control system operates via proximity card readers on pre-defined doors within the stadium. J. Brand Ltd liaised closely with both the club and Newleaf Ltd. to ensure that the areas of the ground that warranted access control were included in the final specification. Some 49 sets of doors were eventually covered by access control.

TDSI ACU Hubs were utilised, capable of operating four doors each. These ACU's were then connected to the structured cable network to allow centralised control of the system via its server and the administrators' networked desktop PC. The ACU's have the facility to operate offline in the event of a network, or power failure, thereby main-

the door in the event of a successful access request from a user's ID card.

Elsewhere, with 16 food and beverage kiosks (87 tills) around the concourse and eight hospitality areas (24 tills), the choice of EPOS terminal had to be robust. The Geller Vectron MiniPos was chosen to fulfil the club's requirements.

J. Brand was aware of the pressures and potential pitfalls that could occur. Working alongside Centerprise International (EPOS and PC suppliers) and Poscon Solutions Ltd. (EPOS s/w), the new EPOS system was installed and operational for the inaugural match.

Building on relationships forged with all those involved in the project, J. Brand succeeded with the implementation of all the necessary systems to allow Southampton FC to officially open the new St.Mary's Stadium on time.

It gave the club confidence that their huge investments would not be wasted with the many IT-related decisions that were required to be taken – decisions based on accurate, tailored, independent advice. The company also proved that removing the IT function from its traditional home with the M&E contractor and placing it with a dedicated, IT aware team, leads to a more integrated and focussed approach and delivery which benefits the club in both the short and long term. ■

Andy Robinson is a project manager at J. Brand Ltd. He was responsible for the delivery phase of the IT consultancy completed at Southampton FC's Friends Provident St.Mary's Stadium.



Turnstile management data is recorded by a new monitoring system, allowing the stadium operations team to 'second guess' event trends and prepare in advance for the visit of thousands of Saints fans to the venue