

WHITEPAPER

DUBAI'S SMART SALEM FITNESS CENTER SHOWS HOW BIOMETRICS BRING CLINICAL AND COMMERCIAL BENEFITS TO HEALTHCARE SETTINGS



The digital transformation of healthcare has accelerated to the point that it impacts almost every aspect of the patient experience. We book appointments online, receive reminders via text and email, enter our medical history and insurance data into tablets, undergo screenings analyzed by artificial intelligence, and receive those test results and manage our billing through an online portal. However, these technology-assisted interactions seem primitive compared to the patient experience provided by Dubai's Smart Salem Fitness Center, a first-of-its-kind medical facility that provides a working glimpse of the future. Smart Salem is the Dubai Health Authority's (DHA) first fully autonomous health center, entirely driven by Artificial Intelligence (AI), designed to provide exceptional VIP services to all visitors.

**AT THE CORE OF
THE FACILITY'S
TECHNOLOGY
PLATFORM IS
PRINCETON IDENTITY'S
BIOMETRIC IDENTITY
SOLUTION. IT SERVES
BOTH AS A DIGITAL
FRONT DOOR TO
THE AUTOMATED
PATIENT EXPERIENCE
AND ENSURES SAFE
CARE TRANSACTIONS
THROUGHOUT
THE VISIT.**

BACKGROUND

In the United States, a "Fitness Center" is where you go to work out. In the United Arab Emirates, it's a specialized medical testing center for individuals applying for or renewing their work visas. The Fitness Centers administer blood tests, chest x-rays, and other medical tests depending on the applicant's type of work. Results are forwarded to the DHA and, assuming they're acceptable, the visa paperwork is processed. In Dubai, it usually takes up to seven days from when a person undergoes testing at a Fitness Center until they receive their visa; they can shave days off the turnaround time if they're willing to pay a higher fee.

Smart Salem is a game-changer. The entire process – medical testing through issuing or renewing a visa – is completed in just 30 minutes. In addition to delivering unprecedented speed and efficiency, Smart Salem transforms medical testing – something most people consider unpleasant – into an entertaining journey into the realm of science-fiction. It does so by leveraging biometrics, robotics, AI, and other technology to create a seamless, fully-automated, aesthetically pleasing environment in which customers enjoy fast, private, and customized service. (The DHA prefers the term "customers" rather than "patients.") The Center caters to VIPS, entertainment celebrities, professional athletes, top corporate executives, and anyone in a hurry and willing to pay for the facility's premium services.

THE CUSTOMER EXPERIENCE

Registration

Customers experience the “digital difference” as soon as they enter the Smart Salem lobby. A friendly robot escorts each visitor to one of four, fully-automated welcome kiosks. Each kiosk houses a Princeton Identity multi-model Access 600 iris and face camera, document scanning technology, and point-of-sale software. Customers insert their passport or identity card and position themselves in front of the kiosk’s camera. The system verifies the document’s authenticity and captures the customer’s face and iris biometric. Both will be used throughout the customer’s visit to provide a seamless experience and ensure that test results are correctly associated with their Electronic Health Record.

The kiosks also accept payment for the Center’s services. Once the transaction is complete, customers take a seat in the lounge area to await their turn.

Medical Testing

Blood collection is the first procedure. Customers are called to one of six phlebotomy rooms and, as they enter, IP cameras mounted at the door verify their identity. This frictionless identity check ensures nobody other than the registered patient can provide the blood sample. The cameras are from a third-party manufacturer; they integrate seamlessly with the Princeton Identity software platform.

Wall-size video screens display calming nature scenes as one of Smart Salem’s few human healthcare workers draws the customer’s blood. Once complete, a robot transports the vials to an onsite lab for evaluation.

Next, the customer receives a chest x-ray. A Princeton Identity Access 200 camera at the entrance to the radiology room scans the customer’s face and iris. As with the blood test, this identity verification automatically links the customer’s identity with their x-ray images. Within the UAE,

the iris biometric is the national standard used by immigration, and results of tests conducted at Smart Salem are submitted to the Dubai Health Authority and the Department of Immigration. Therefore, using the iris for identity verification provides seamless continuity as records move between authorities.

Finally, certain visa applicants – such as workers in the food industry – must submit a set of vital signs, including blood pressure, heart rate, temperature, and weight. For this, customers enter one of three special capsules or “pods.” Inside each pod, a PI Access 200 camera captures the person’s iris and face for identification, while a PI sensor registers their temperature. PI’s temperature-reading sensor was initially brought to market as a tool for automated COVID screening, but Smart Salem has adapted it for integration within its pods. A range of automated technologies simultaneously measures other required vital statistics.

The full medical screening takes approximately 15 minutes. In just 15 more, healthy applicants can walk out the door, visa in hand. While they wait, they have access to their choice of music, beverages, and online entertainment. Customized comfort is an essential component of the premium experience.

Visa Approval

Test results are encrypted and securely transmitted to the Dubai Health Authority. The DHA stores the Electronic Health Record and associates it with the customer’s biometric identification. The PI system does not hold the EHR data – it only stores the customer’s biometric data, which can be used for future identification verification.

An official Office of Immigration resides within the Smart Salem facility. In coordination with the DHA, this office completes the final stage of processing customers, physically issuing the necessary passport stamps before sending customers on their way.

TECHNOLOGY CHALLENGES

Designing Smart Salem for the ultimate customer experience involved challenges far more complex than getting each technology to work; the solutions had to work in harmony, seamlessly and often invisibly.

Mohamad Tohme, who heads Princeton Identity's business development efforts in the Middle East, explains, "PI's software is the hub of Smart Salem's technology platform. As such, we worked very closely with the client and their systems integrator throughout the installation, making sure that they understood how our platform works in coordination with all the other software in place. In addition, there are best practices that must be followed to optimize our system's performance. PI was directly involved in designing the kiosks, determining placement and mounting angles of all IP cameras and iris readers, integrating temperature sensors within the physical architecture of the screening pods, and even instructing how sunlight should be filtered through windows so as not to interfere with our cameras. Also, as the facility's aesthetics contribute considerably to the overall visitor experience, we worked to ensure our technology was visually unobtrusive, blending in with the building's clean, modern décor.

PRINCETON IDENTITY PLAYS AN INTEGRAL PART OF OUR MANAGEMENT INFORMATION SYSTEM.

SAID BISHIR, CHIEF TECHNOLOGY OFFICER,
SMART SALEM MEDICAL CENTER LLC. (BUSINESS PARTNER)

As Smart Salem has been developed as a prototype for future Fitness Centers throughout Dubai and the UAE, PI is already working with Smart Salem and the Dubai Health Authority to plan for the needs of a larger, connected network. This would include the ability to call up data of repeat customers across multiple sites. Enhanced system redundancy, offsite data storage, and a virtual server environment are all under discussion. "From our perspective, there's no limit as to what we can do," Mr. Tohme explains.



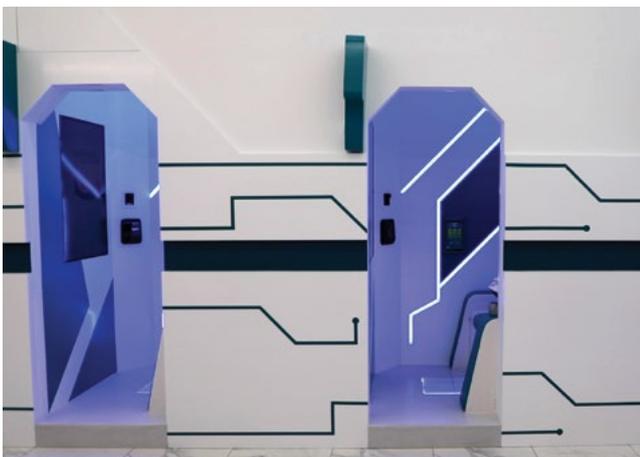
MEASURING SUCCESS

SINCE OPENING ITS DOORS IN FEBRUARY 2020, SMART SALEM HAS PROVIDED RECORD-BREAKING TURNAROUND TIME TO OUR CUSTOMERS, THUS REDUCING OUR CARBON FOOTPRINT.

SAID BISHIR, CHIEF TECHNOLOGY OFFICER,
SMART SALEM MEDICAL CENTER LLC. (BUSINESS PARTNER)

Applications for biometric identity, and particularly the iris, are a natural fit for the healthcare field. Regardless of a patient's physical or mental state, age, race, or language spoken, biometrics can quickly and accurately provide a means to identify patients. However, Smart Salem has demonstrated a range of uses for this flexible and convenient technology beyond the clinical, showing how biometrics are equally valuable in enhancing the customer experience.

Hospitals, outpatient facilities, and clinics have the opportunity to similarly leverage biometrics to create a more seamless, unified healthcare experience for patients and their loved



ones. Registration can be streamlined through identification verification processes much the same as Smart Salem's kiosks do. Automated fever detection can occur simultaneously. Because the iris is unique to each individual, patients with similar names cannot be confused. The system immediately recognizes duplicate records of individuals whose names have changed or use multiple spellings.

Healthcare workers can more quickly access records, expediting care. So can administrators, who benefit from a reduction in billing and insurance errors.

Visitors experience more freedom to come and go. When biometrics are integrated with a visitor management and access control system, enrolled family members eliminate the need to check-in at a registration desk and can head directly to the ward that they're visiting. Nursing staff doesn't need to buzz them in.

Smart Salem's VIP clientele is already enjoying the many advantages biometric identity solutions bring to a healthcare setting. Fortunately, in the not-to-distant future, this flexible and accessible technology holds the promise of improving the patient experience for society at large.

PRINCETON IDENTITY BIOMETRIC TECHNOLOGY IDENTIFIES OUR CUSTOMERS AND REGISTERS THEM INTO OUR DIGITAL QUEUE; ALLOWING FOR A SEAMLESS AND COMPLETELY PAPERLESS CUSTOMER JOURNEY.

MUHAMMAD GHREWATY, SMART SALEM PROGRAM MANAGER,
DUBAI HEALTH AUTHORITY