Case Study

PLANT COMPONENT CHANGE DOWN, MONITIRING AND MANAGEMENT SYSTEM

Profile of the Company

SCRI-IS Technologies are an independent consultancy, analysis, training, and technical solutions provider. We specialise in managing the full life cycle of complex engineering components integral to modern process manufacturing. Utilising both current and next generation asset management techniques we continually develop client focused, regulatory compliant solutions to improve the availability, predictability and reliability of high-value production systems in ever more demanding environments.

Problem to be Solved

This Project focused upon developing a Customer Relationship and Asset Management System, based upon gathering data associated with mechanical aspects of valves and for generally managing the service provision associated with ECO (Elastomer Change Out)

Elastomers are rubber-like materials supporting flexible and elastic properties. They primarily ensure tight seals between hard metal surfaces. Elastomers prevent leaks and separate fluids that should never come into contact. Many Biopharma plants have a large scale of installed valves (5000 or more). Each one needs to be serviced, maintained and documented correctly to avoid problems (ECO Register). The cost of failure is high, but the cost of exchange is also high. It is estimated that 50% of maintenance activity is consumed by soft parts change out. There is also plant downtime, therefore there is a clear need for cost saving measures.

Nimbus Technology Gateway developed a Customer Relationship and Asset Management System to be used for a subset of the plant, where valve diaphragms are being serviced/maintained (ECO Service). The assets that are tracked should fit into or correlate with BIM/P&ID drawings. Once information is gathered from the client site, the aim is to maintain access to a historical record of ECO register records and reports for both clients and SCRI- IS Technologies stakeholders. It is envisaged that the Customer Relationship and Asset Management System will support the ECO service division, production managers, admins and customers with levels of access to effectively manage all processes, communications and documentation associated with the ECO service in a streamlined manner.
Innovative Solution

Researchers from the Nimbus Technology Gateway applied a User Experience (UX) methodology to gather information to identify and analyse end users’ requirements, which were influential towards informing both functional and non-functional requirements incorporated during the software development life-cycle.

The project applied Design Thinking as a user centred design process where user research, design, prototyping and user testing activities were undertaken in collaboration with representative end users and stakeholders during engaging user experience design workshops. Based upon analysis of the information gathered during stakeholder consultations, and design thinking workshops, this informed the preparation of functional and non-functional requirements.

These requirements set out the criteria describing the desired capabilities for the proposed Customer Relationship and Asset Management System so that end users will have an optimal user experience. User experience research and design activities and deliverables were fundamental towards informing software development requirements, which were concentrated on user research needs gathered, where, at the same time, a technology development roadmap was developed.

Impact for the Company

The innovative application allows workers to operate more efficiently with significant time savings. Data logging has migrated from being paper-based to being tablet-based which assists technicians by providing validation, feedback, suggestions and integration with the tablet camera. The process is not only faster, but is also less prone to mistakes such as incorrect or missing data. The system also handles report generation, register uploading, synchronization and reduces the effort required by administrative staff in organising their operations.

Client Testimonial

Dr Darren McDonnell,
Director SCRI-IS Technologies

“The Nimbus Technology Gateway…have contributed greatly to initial services research and development for SCRI-IS Technologies. We have a strong international focus and this project certainly paves the way for earlier than expected entry into targeted international markets”