Health Sector

Zoodata has been providing Digital consulting services, database installation, management, migration and support, and systems maintenance, modifications and enhancements to the WA government health sector for twenty five years. For twenty years Zoodata was contracted to BreastScreen WA (BSWA) and the WA Cervical Cancer Prevention Program (WACCPP) to provide Digital strategy, support services and countless enhancements and modifications to and across all each organisation's core business systems. Both organisations required Zoodata to manage large data sets. We also develop new solutions (including mobile applications) when required, and were responsible for the transition of the mammogram screening program from analogue to digital imaging – a major milestone in Western Australian healthcare.

Zoodata has an in-depth knowledge of internationally recognised e-health standards and protocols. It is our understanding to effectively implement these health organisations need to be supported by the most efficient and cost-effective IT systems possible. Because Zoodata has 25 years' experience supporting a range of government entities, especially mission critical capability in the Health Services domain, we believe we have the expertise necessary to deliver efficient, effective, personal, and trusted services.

Government of **Western Australia**
Department of **Health**

MEDICINES & POISONS REGULATORY BRANCH 2020-2022

ERRCD System Implementation and Support

The Zoodata team was contracted by the WA Department of Health's Health Support Services (HSS) to implement, configure and complete enhancements to the Electronic Recording and Reporting of Controlled Drugs (ERRCD) system. ERRCD was to replace the existing legacy system – the Monitoring of Drugs of Dependence System (MODDS), which Zoodata had been supporting for 10 years. The ERRCD system was to be implemented in HSS's HealthNext environment. Zoodata provided the services of a DevOps Engineer and two senior developers to complete the work.

The ERRCD system was developed several years ago by a 3rd party vendor and licenced to the Commonwealth Government. The latter offered ERRC to MPRB, excluding development or support services. To meet Western Australian legislative requirements additional modifications to the ERRCD system were required. The original vendor subsequently ceased trading and was unable to deliver MPRBs requested enhancements and modifications.

As Zoodata had specialist e-health knowledge and in-depth knowledge of MPRB's business practices, and of the MODDS system Health Support Services engaged Zoodata to completed MRPB's requested enhancements and modifications. As minimal system and architectural documentation had been provided prior to project start, and the project included federally mandated deadlines, Zoodata personnel had to become familiar with ERRCD quickly.

Due to the age of the system, ERRCD also required a significant amount of improvement and modernisation work including upgrades using C# and .NET, and the implementation of robust test harnesses.

Zoodata was also required to complete data migration (including ETL) from MPRB's Oracle based Monitoring of Drugs of Dependence System (MODDS) to the ERRCD system. The system has been successfully deployed to HSS and is being used by MRPB customers throughout Western Australia.

Zoodata is providing MPRB with ongoing support for the ERRCD system.

Zoodata expertise:

- Build

- Testing

- User acceptance testing

- Transition and deployment to production

- Verification and validation (both pre and post production)

- Data migration

- Incident and problem reporting

- Enhancements

- Ongoing maintenance

HEALTH SUPPORT SERVICES MAY-JUNE 2021

ADHA Project – Portlets

Zoodata was contracted by Health Support Services to provide application development for three projects contained in the Australian Digital Health Agency (ADHA) Program's Ambulatory Workbench application:

- Electronic Prescription Messaging

- Electronic document upload to My Health Record from the Community Health Information Systems (CHIS)

- Alerts and Allergies Reconciliation Phase 3

These projects included the development of:

- an Ambulatory Workbench application

- the eDocument Portlet with document upload functionality

- eDocument Portlet with document upload functionality

- eAllergy Portlet to replicate NaCS Functionality

- eMedication with ADHA Functional and Non-Functional requirements

- User interfaces for each project

- System documentation of developed solution

The Zoodata team was required to ensure development was undertaken using agile methodologies; be mobile friendly; easily containerised into a docker container; use REST API to fetch data and use JSON web tokens to control user sessions and authentication.

Zoodata expertise

During the term of this contract Zoodata provided an application development team which delivered:

- Development services and implementation support services for the development, testing and implementation of the work packages

- Implementation & technical testing support services as required by HSS

- Successful completion, delivery and implementation of the work packages, and including appropriate

- Technical /support documentation;

- Worked alongside the internal HSS Integration Developers to ensure a complete end to end solution was delivered;

- Ensured the work packages were transparently visible to the HSS integration resources linking up the portlets / UIs to the relevant WA Health applications

- Weekly code drops so HSS integration resources could develop in parallel; and

- Provided HSS with information, knowledge, documentation and support for the development and integration of any associated interfaces/application integrations.

As Zoodata has been using agile development practices for over a decade this team was easily able to adapt to changing requirements encountered during this project, and without impact on either the project deadline or deliverables.

Due to resourcing issues within HSS and to meet a tight deadline, Zoodata was also required to provide extra resources to supplement the existing team. The project was successfully delivered on time and under budget.

MEDICINES & POISONS REGULATORY BRANCH 2010-2020

MODDS Support and Maintenance

Zoodata has extensive experience in providing corrections, maintenance, enhancements, and support to the mission critical Monitoring of Drugs of Dependence System (MODDS) for the Medicines and Poisons Regulatory Branch (MPRB). This system, together with the Licensing System, form key components of MPRB's business processes and required work to correct bugs, improve performance, and add business critical functionality to support key business processes and new regulatory measures.

When Zoodata commenced work as the sole contractor in 2010, it was determined only old source code (and almost no current source code) of various MODDS versions was available –. i.e. the MODDS program in everyday production use could not be rebuilt from the available old source code, and details of many of the changes were not available. This represented a very high risk for MPRB and unexpected difficulties for

Zoodata. To remedy this situation, it was decided only source code requiring changes to implement bug fixes, performance improvements, new functionality, & etc would be reviewed and brought up to date.

This process has been successful, has achieved many system improvements and brought the code for many areas up to date. It was considered more cost effective to redesign and develop several existing screens.

Zoodata staff worked closely with the MPRB Product Owner to design User Interfaces, then develop, test, document and successfully deploy these to production.

Zoodata has built a trusted relationship with MPRB, with our staff collaborating with stakeholders from all tiers of the business. We have also developed a good working knowledge of the MPRB business processes.

We have worked with MPRB and MODDS, and for other branches of the Department of Health in two Australian states, for over 10 years and understand the Health Support Services (HSS) processes and structure and how to progress issues which may involve HSS or other Network Support providers.

Zoodata staff provided a vital service to ensure Medicines and Poisons Regulation Branch complies with government legislative and statutory requirements. Services provided by Zoodata have also led to MPRB dramatically reducing their risk and liability.

"Zoodata will go the extra yard beyond the contract specifications to make sure the project is a genuine success from our perspective. That's a big one for me. They listen and they engage. They make a real attempt to understand, well beyond 'here's a list of specs and away we go', because they are genuinely interested. They ask intelligent and pertinent questions to make sure they get the best out of the project."

Program Manager, Medicines and Poisons Regulatory Branch, WA Department of Health

Zoodata expertise:

- Extensive Health experience

- Management of large data volumes

- Complex analysis and reporting

- Alignment with regulatory and legislative requirements is essential

- Close working relationship with Departmental Solution Owners and relevant users

- Support, maintenance and enhancements provided to multiple mission critical and legacy solutions

- Liaison with DOH Infrastructure Support personnel (HIN)

- Liaison with 3rd party vendors.

Benefits to the client and the community

- Zoodata's extensive domain knowledge assisted PSB to:

- Reduce time and effort required to manage drugs of dependence in WA

- Reduce PSB's risk and liability

- Receive dispensing reports from pharmacies

- Save taxpayers' money

ACT HEALTH (UNDER CONTRACT TO OAKTON) 2017-2018

Digital Imaging Strategy

Our Technical Director's extensive health IT industry knowledge was enlisted to provide research and analysis services to ACT Health. His recommendations will inform the direction of future project work for Oakton's ACT Health contracts.

ACT HEALTH (UNDER CONTRACT TO OAKTON) 2017

Health Enterprise Data Hub

Zoodata was contracted by Oakton to be part of a team providing application development to replace their existing data warehouse. Our team was required to use a range of tools and technologies including MarkLogic, SQL Server, SQL Integration services, SQL analysis services, SQL Reporting Services, Visual Studio, C#, Java, Azure, XQuery, BitBucket, Jira, and Confluence.

Oakton sought to provide an accurate, reliable and up to date data warehouse and data hub with master data services. This will provide easy and accurate reporting for ministerial and administrative purposes, and provide information on accuracy and quality for internal process improvement to data entry staff.

Stage 1 of this project succeeded in delivering an end to end proof of concept.

Zoodata Expertise:

- Extensive Health experience
- Complex analysis and reporting
- Data hubs
- Large data volumes
- Provision of an initial end to end proof of concept / plan
- Close collaboration between Zoodata developers and Departmental IT staff and developers, domain product owners, and other relevant stakeholders.

Benefits to the client and the community:

- Improved accuracy of health data
- Improved data security
- Improved reporting capabilities

"Zoodata's performance has been exemplary over the last 8 weeks and I sincerely intend to engage Zoodata as often as possible."

Analytics & Information Services Practice Lead, Oakton Services (for ACT Health)

NORTHBRIDGE MEDICAL CENTRE 2016 - 2017

Pathology Results System

Because of our significant experience in the Western Australian public health IT sector Zoodata was approached and engaged by the Northbridge Medical Centre to build an online system. The Zoodata Architect/Team Lead selected an experienced development team with skills in both User Interface and backend development.

Zoodata Expertise:

- Provide a secure payment gateway
- Include strong security
- Develop a service on a third party system using available APIs
- Incremental delivery of software
- Needs to be available via desktop and any mobile device
- Ability to upscale in future

The Alpha version was launched in July 2016, and operated successfully until the sale of the medical practice by our client in early 2017.

BREASTSCREEN WA 1996-2016

Zoodata successfully provided software development, maintenance and support for all BreastScreen's core business, server and database systems for twenty years by providing a reliable pool of permanent staff who are all flexible problem solvers.

From 2011 the number and complexity of these systems increased significantly due to the completion and near completion of a number of projects including the introduction of digital mammography and PACS, digital clinics, online mobile clinics, Online Booking, Bunbury Assessment Centre, links to TOPAS, and conversion of MSR from Oracle Forms and Reports to .NET. This had an enormous impact on the complexity of the physical infrastructure, databases, servers, services, software, and technologies. Over this period, Zoodata performed many successful enhancements, fixes, upgrades, and software releases and maintained BreastScreen's ability to deliver service to its customers. During this period BreastScreen's operations were regularly reviewed by BreastScreen Australia and always received full accreditation at the highest level with a low cost per screening.

BreastScreen and Zoodata established and worked with Team Foundation Server (TFS) to efficiently capture, manage, and prioritise user enhancements and reported bugs. TFS allowed BreastScreen and Zoodata maintenance teams to track the progress of work items. Source code was also maintained and version controlled in TFS with all changes linked to work items.

Prioritising bugs and maintenance items in TFS provides progress visibility for all stakeholders

Zoodata ensured all changes went through a change management and release process including

development (DEV), feature testing (TEST), user acceptance testing and stabilization (UAT), and production release (PROD). This process was integrated with the HIN change management process and the Change Approval Board (CAB) as required, including request and change tracking using HP OpenView.

The Zoodata contract ended due to funding constraints. All support is now undertaken within BSWA.

Zoodata expertise:

- Management of large data volumes

- Extensive Health experience

- Complex analysis and reporting

- Data hub

- Alignment with regulatory and legislative requirements is essential

Delivery of successful projects provided a continuum of high business value to BreastScreen WA.

Benefits to the client and the community

Zoodata's extensive domain knowledge assisted BSWA to:
- Conversion from analogue to a more efficient, cost effective digital screening process

- Streamlined screening process, including online booking and SMS reminders

- Provide screening services in remote and rural locations state wide

WA CANCER PREVENTION PROGRAM 1996-2014

The WA Cervical Cancer Prevention Program (WACCPP) was the WA component of the National Cervical Screening Program. One of the main functions of the WACCPP was to maintain and operate the Cervical Cytology Register (CCR) which is a database of cervical screening test results (including Pap Smears, cervical biopsies and HPV DNA tests) for women screened in Western Australia.

From 1996 until 2014 Zoodata provided software maintenance, development services, architectural and domain specific e-health consultancy services to the WACCPP.

Zoodata developed and maintained the programs which:
- Receive client & GP data; Pap Smear, cervical biopsy & HPV DNA test results from laboratories to import into CCR database.

- Automatically matched laboratory data with clients already in the database

- Provided a clerical review facility to manually match data which can't be matched automatically to clients in the database
- Used address standardisation software compatible with the AusPost database & in accordance with national registry minimum standards, to generate Pap Smear reminders & other letters to women & medical providers
- Generated statistical & management reports
- Generated reports to assist laboratories with annual accreditation reporting requirements
- Generated statistics for the WACCPP Annual Report
- Provided QA reports & scripts
- Provided data de-duplication
- Assisted in data extraction and export
- Automated response reports to data queries from laboratories

Zoodata also provided comment and advice to assist the Australian Institute of Health and Welfare in the development of the national data dictionary for cervical cytology registries.

Zoodata expertise:
- Management of large data volumes
- Extensive Health experience
- Complex analysis and reporting
- Data hub
- Alignment with regulatory and legislative requirements is essential
- On-site customised support and development to support a specialised system

Benefits to the client and the community
- Provision of statistical data contributed to a national approach to reducing cervical cancer
- Provision of reminder and follow up services assisted in the prevention of cervical cancer
- On-site customised support and development to support WACCPP's ongoing requirements

The WA Cervical Cancer Prevention Program and other State Registries were replaced by the National Cancer Registry. Zoodata support for the WA CCR was no longer required and was gradually wound down.