



Australian Government
**Australian Pesticides and
Veterinary Medicines Authority**

Digital Strategy

2018–2022





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1 Summary

The horizon of 2022 represents a period of significant change for the Australian Pesticides and Veterinary Medicines Authority (APVMA). This change stems from the government commitment to decentralise the authority by relocating operations to regional Australia.

On 9 June 2016, former Deputy Prime Minister and Minister for Agriculture and Water Resources, the Hon. Barnaby Joyce MP, announced the Coalition Government would establish a Centre of Agricultural Excellence at the University of New England by co-locating the APVMA with the university and other specialised agricultural research centres. Delivering this commitment provides the opportunity to transform the business, invest in our people and sets us on a path to deliver world-class agricultural and veterinary (agvet) chemical regulation from regional Australia.

A new business operating model, supported by modern technology, will assist the authority improve and sustain organisational performance levels for completing client applications within statutory timeframes and also increase client and industry satisfaction rates.

The APVMA's present information and communication technology (ICT) environment is at the point of critical failure. Investment in the authority's infrastructure, applications and core business systems is vital to support the transition to Armidale, New South Wales, and underpins future efficiencies in application assessment and registration.

This digital strategy outlines our vision for a digitally enabled regulator by 2022. The strategy provides the framework for investment in an enabling technology program that will address the significant risk of ICT failure – stabilising, digitising and modernising APVMA's regulatory service delivery.





2 Drivers for digital investment

The APVMA is the independent statutory authority responsible for assessing and registering pesticides and veterinary medicines in Australia.

We provide a regulatory service for the supply of safe and effective animal health and crop protection products that support Australia's agricultural industries. There are roughly 12 000 agvet chemical products on the public register and the authority receives over 5000 applications each year. These applications include products for treating crop and garden diseases and pests, and medicines for treating agricultural and companion animals.

Streamlining regulatory service delivery at the APVMA provides Australia's agricultural and veterinary industries with improved access to products that protect the value in crop production and delivers animal health outcomes. Investment in the APVMA's ICT infrastructure, complemented by improved business processes and a new business operating model, will support more efficient regulation over time and support the APVMA to assess and register products in line with legislative timeframes.

A new digital strategy will enable world-class regulatory services to be delivered from regional Australia

The APVMA's relocation to Armidale presents a once-in-a-lifetime opportunity to reshape our operating model and deliver much needed business and performance improvements. The APVMA will be a stronger and more responsive organisation as a result.

A focus on core roles of standard setting, risk management, quality assurance and audit/compliance will be required in order to draw on a network of scientific assessors and long-term partnering arrangements. New technology, an improved ICT environment, and new business systems and practices will enable the APVMA operations from Armidale in 2019.

A technology enabled business to mitigate risks associated with the APVMA's relocation

In 2016, Ernst & Young (EY) was engaged to undertake a cost benefit and risk analysis of the [potential] relocation of the APVMA¹. EY identified a number of key risks stemming from the relocation, including risks associated with access to stakeholders, staff departures and knowledge retention.

To mitigate these risks, EY recommended, amongst other measures, the APVMA develop a new business model that allows for technical assessment work to be conducted remotely (e.g. through teleworking); and outsourcing technical assessment work to maintain service delivery. This business model was subsequently developed by the APVMA with the assistance of Pegasus Economics and released publicly on apvma.gov.au.

The digital strategy will play a key role in delivering the APVMA business model by supporting our relocation to Armidale. For example, supporting teleworking will allow us to retain access to highly



specialised regulatory scientists who choose not to relocate, enabling a period of sustained operation and knowledge transfer to new staff. Introducing end-to-end online registration will streamline and improve the efficiency of the APVMA's assessment functions, allowing for sustained effort when registering new products. New and better communication tools, and online submissions and end-to-end management of applications, will ensure maintained access to stakeholders and clients.

Intervention to reduce the significant risk of ICT failure and enable a new business model

Preparatory analysis informing the APVMA's digital strategy has demonstrated historical underinvestment in the APVMA's ICT operating environment. In November 2016, the government provided \$288,000 towards the development of a fully-costed digital strategy that would support relocation. This investment funded work to define the scope of a program that focused on extending APVMA's existing work to implement a paperless system by introducing a new, networked model.

Early analysis found the APVMA's foundational ICT environment lacking. An independent review conducted by Oakton ICT Consulting Company found the ICT environment unable to support current operations and pointed to significant risk in the ability of APVMA's current ICT infrastructure to support relocation to Armidale. This assessment was further supported by Pegasus Economicsⁱⁱ, who suggested the APVMA lacks the ICT capabilities to support permanent, out-posted arrangements for staff. Applications are largely processed through multiple legacy systems and data is stored in separate silos that have limited capacity to communicate with one another.

3 Business opportunity

The government's decentralisation agenda will see the APVMA relocate to Armidale in 2019.

The APVMA will use the opportunities that the relocation provides, to implement change in our business and build for the future, providing for the delivery of APVMA's world leading regulatory services from regional Australia.

To realise these strategic objectives and effectively manage relocation we must make significant advancements to the service delivery with clients and industry. Substantial improvements must be made to enable the authority to assess applications within or before the statutory time frames. To assist with achieving these efficiencies, we will modernise the current aging, fragmented ICT infrastructure and applications environments to support corporate objectives, reduce the risk of ICT failure in the next two years and position the authority to operate digitally by default and be aligned with broader ICT government policiesⁱⁱⁱ.

A baseline of our current ICT environment suggests that effort and investment be directed towards digital enhancements that improve client and stakeholder services, address the ageing and fragmented ICT environment, and digitally enable the business.

3.1 Improve client and stakeholders satisfaction with APVMA service delivery

We provide services to a range of clients and external stakeholders, including suppliers, retailers, manufacturers and users of agvet chemicals and products. External stakeholders also engage with the APVMA to seek advice on current issues, obtain information relating to approved agvet products and permits or report adverse events.

During 2016–17, the APVMA continued to place focus and maintain its strong commitment to client service excellence. As part of this commitment, in November 2016, the authority undertook a usability review of the website apvma.gov.au. The focus of this review was to seek input from a range of clients and stakeholders on ways the organisation could improve its website which is the starting point of client interactions and submissions of applications to the APVMA.

Clients indicated they want efficient, transparent and predictable information regarding the status of their applications. Also, the lack of self-service capabilities is forcing clients to contact the authority via telephone or email regarding matters such as:

- The status of their application and seeking guidance on how to find information on the website.
- The process to give applicants and holders access to the external portal to submit and manage their applications must occur with the client completing a form that is then emailed to the APVMA for processing.

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- When an applicant wishes to change their contact or company details they are required to complete a form and email it to the organisation for actioning.
 - Clients are not able to make payments online for all applications – an example includes Manufacturing, Quality and Licencing (MQL) submissions, which require a separate finance process and must be completed manually.

In 2016–17 the authority answered 7100 telephone calls and 8800 emails from clients with a response time of up to one working day for telephone enquiries and up to five business days for written enquiries. While these figures reduced by 25 per cent from the prior year based on the establishment of a Case Management and Administration Unit (CMAU), the CMAU needs to gather information from multiple ICT systems and business areas to respond to inquiries. This process relies heavily on staff keeping consistent and accurate client data. It is also reactive, manual, inefficient and costly due to the additional staff required to perform these duties as well as the increased administrative overheads required to support this business function whilst also failing to provide clients with the most efficient delivery of services.

3.2 Revitalise the aged and fragmented ICT environment to support business outcomes

A significant portion of APVMA’s ICT environment is either at end-of-life or out-dated and fragmented. The authority has built up a level of technology debt that can no longer support the immediate need to make strong increases to performance levels and support a successful move to regional Australia. Performance statistics for the 2016–17 financial year showed a level of volatility in the APVMA’s ability to meet statutory timeframes for registrations. The authority received 2910 applications of which 69 per cent were completed within statutory timeframes (shown in Diagram 1 below). The number of applications received each quarter has increased, on average, by 50–80 applications per quarter. This trend of increasing volumes of new applications is expect to continue.

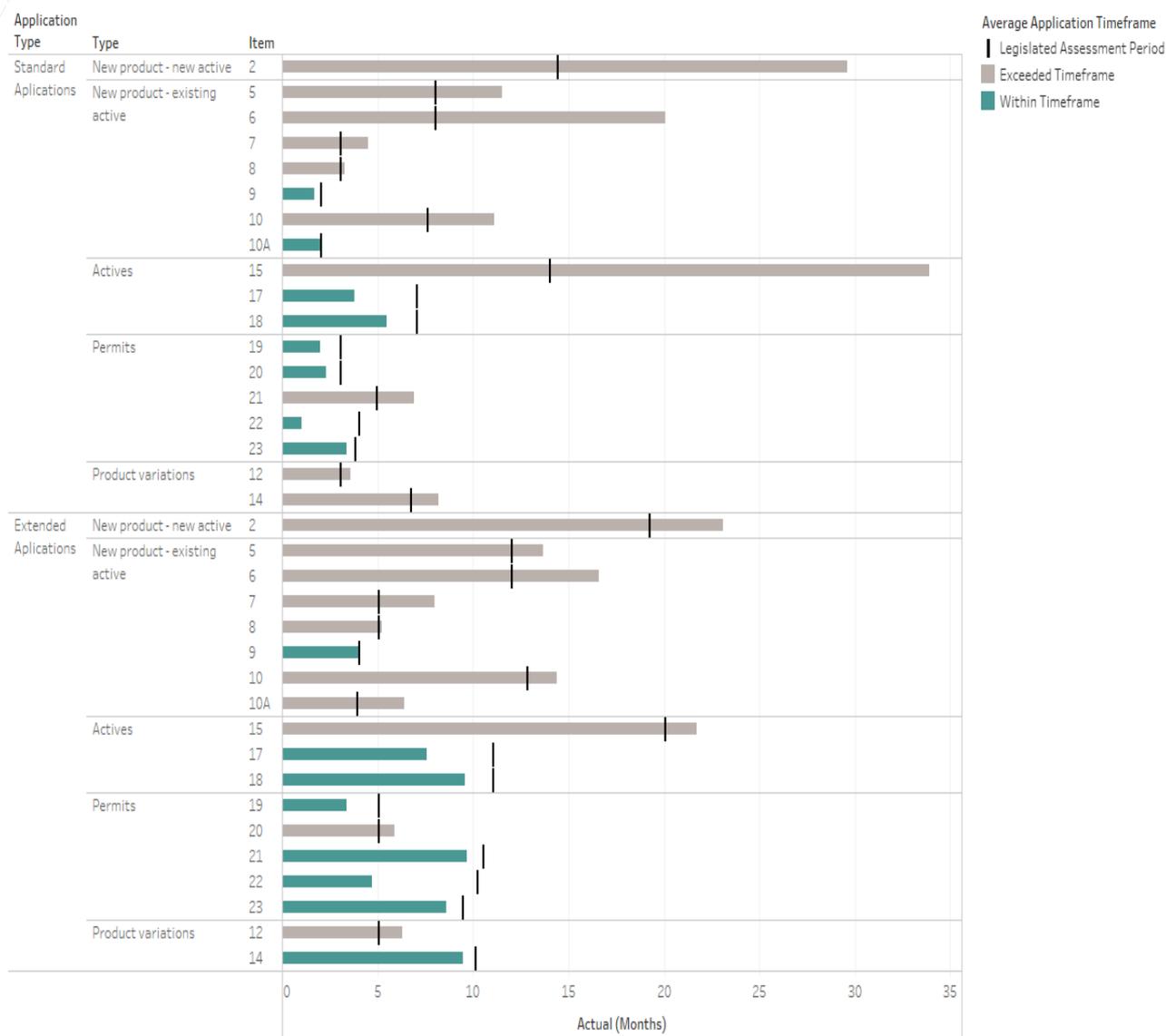


Diagram 1: APVMA Performance against applications and time to finalisation, 2016–17

The authority has identified several key factors that are hindering performance levels. A summary of these is provided in diagram 2 below.

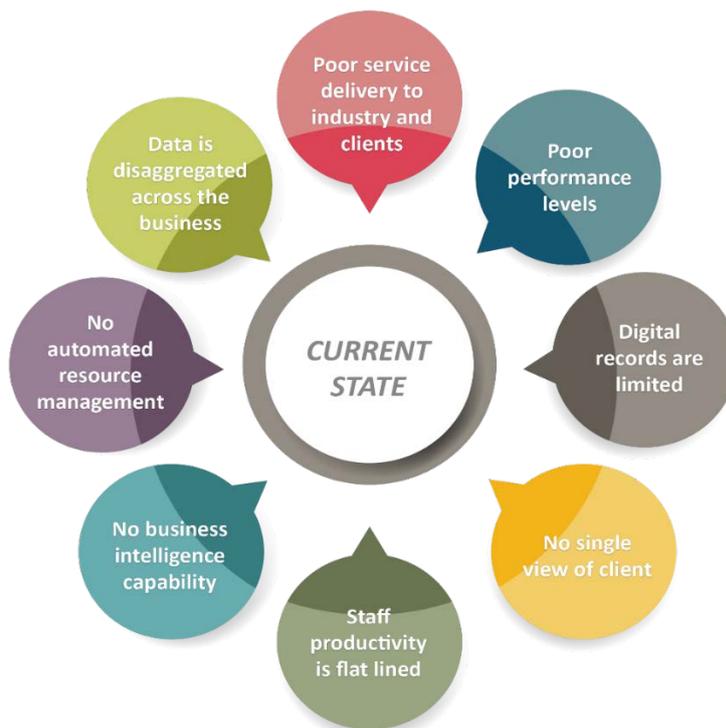


Diagram 2: Key factors hindering APVMA performance

3.2.1 Break the productivity flat line

The authority primarily operates its business functions through internal and external business systems. The internal portal supports the processing of client applications across multiple business areas. The external portal provides agvet information to clients and stakeholders as well as the functionality to lodge and manage their applications. However, the ICT systems that support these portals are fragmented, most workflows are not automated and there is no integrated single repository of information to effectively extract and manage data for business reporting or analytics.

As a result, business areas are continuously required to obtain data from both portals to perform their work activities. This process is performed manually by staff developing off-system access databases and spreadsheets to manage and store information relating to client applications – leading to increased staff effort and time taken to perform their work activities.

A client application may also require input from multiple scientific teams across the business to perform assessments and approvals but not all business areas have visibility or access to data that is being stored by individuals. This is again contributing to increased staff effort to find data sources, and remove or cleanse duplicate data. Investment in the APVMA's digital strategy will automate workflows and unlock opportunities for incremental productivity gains in scientific assessment and registration areas and application management.



3.2.2 Automate tools to manage resources

The APVMA manages resources using a combination of business developed spreadsheets, access databases, and the internal portal. Information is not always current or accessible. There are also instances where business areas cannot easily understand and interpret information without assistance from the staff member who created the file. While the organisation has managed this way of operating to date, implementation of a new operating model will be supported by an automated system for workforce planning that will manage and monitor staff workloads and achieve regulatory efficiencies.

3.2.3 Enhance data analytics and business intelligence capabilities

APVMA data is currently disaggregated, predominantly managed and stored offline and is used inconsistently across the business. This is primarily the result of fragmented business systems and having no integrated single repository of information. Manual workarounds to store and manage data off the system have developed as a result of the failing system functionality and capability.

Through the digital strategy, we will use opportunities to enhance our data capabilities and business intelligence systems to enable real time 360-degree view of our business.

3.2.4 Digitise records

The APVMA has approximately has 200 000 files that may be recalled and used by staff at any given point to perform application assessments.

During the assessment process there can be between 1–16 people working on a client file. Files are required to be manually transported around the organisation and potentially between the APVMA's on-site and off-site storage facility managed by an external provider. This process is inefficient, time consuming and reduces staff productivity levels.

As the organisation transitions to its new business operating model, we must modernise data practices to enable flexible working and provide staff access to files anywhere, anytime. Through the digitisation of thousands of paper files the APVMA can better support flexible working arrangements and enable teleworking as we transition to Armidale. A reduction in future costs for file storage and information management can also be achieved through the investment in digitisation by reducing the demands on the authority's information management team to recall, distribute and store existing paper records.

3.2.5 Enable a single view of clients

As the organisation implements its new business operating model, it will become critical for staff to see an up-to-date and complete view of the client and the status of their application to improve service delivery, enable proactive decision making and to build a data centric organisation.

Delivery of the digital strategy will address the fragmentation of ICT systems and outdated technology to provide the business with a single view of the client.



The CMAU team currently manages over 16 000 client inquires per year. In most instances, they are unable to immediately respond to the client's request because no real-time, consolidated history of the client exists. A single repository of information is needed to reduce resource efforts, enable the authority to view past communication and application history, and meet client service expectations.

4 ICT Current State

The APVMA's ICT infrastructure and applications environment is either at end-of-life or out-dated and fragmented.

During 2016, the authority had an early stage independent review undertaken by Callida Consulting who confirmed the poor state of the APVMA's ICT environment. A further detailed review was undertaken by Oakton in 2016, again on the current state of the APVMA's ICT environment. It was revealed by Oakton:

An assessment of the current APVMA Information Communication Technology (ICT) capability revealed that the Authority will find it extremely difficult, if not unmanageable, to continue its operations due to its current ICT ecosystem which is fragmented, of inferior capability and lacks of coordination.

Currently, the APVMA's ICT systems are operating in a degraded state and, resultantly, its business processes are convoluted and inefficient, which in combination does not provide a solid base to enable the business transformation necessary to support the Authority's ongoing activities, let alone a full relocation of operations.

Importantly, although the system appears to provide short-term stability in maintaining current business processes, it is crippled by legacy applications. Furthermore, the current degraded system set is operating on the brink of critical failure. Existing systems cannot effectively be scaled up to sustainably enable remote working, data-centricity, data-drivenness, or lean, agile business practice.

We have now reached a point where technology investment is needed to mitigate the significant risk of ICT failure. The APVMA does not currently have the ability to provide the end-to-end digital services that clients and industry expect. Without investment, we will not be able to deliver strong improvements to performance levels. Internally, we will find it difficult to successfully relocate to Armidale, create a seamless teleworking environment for staff that will continue operating from Canberra including the increased use of external service delivery partners as part of the new business operating model and effectively manage business disruption levels over the coming 18 months with the current technology capability.

Diagram 3 below further demonstrates the APVMA's fragmented and ageing technology environment.

Current application architecture

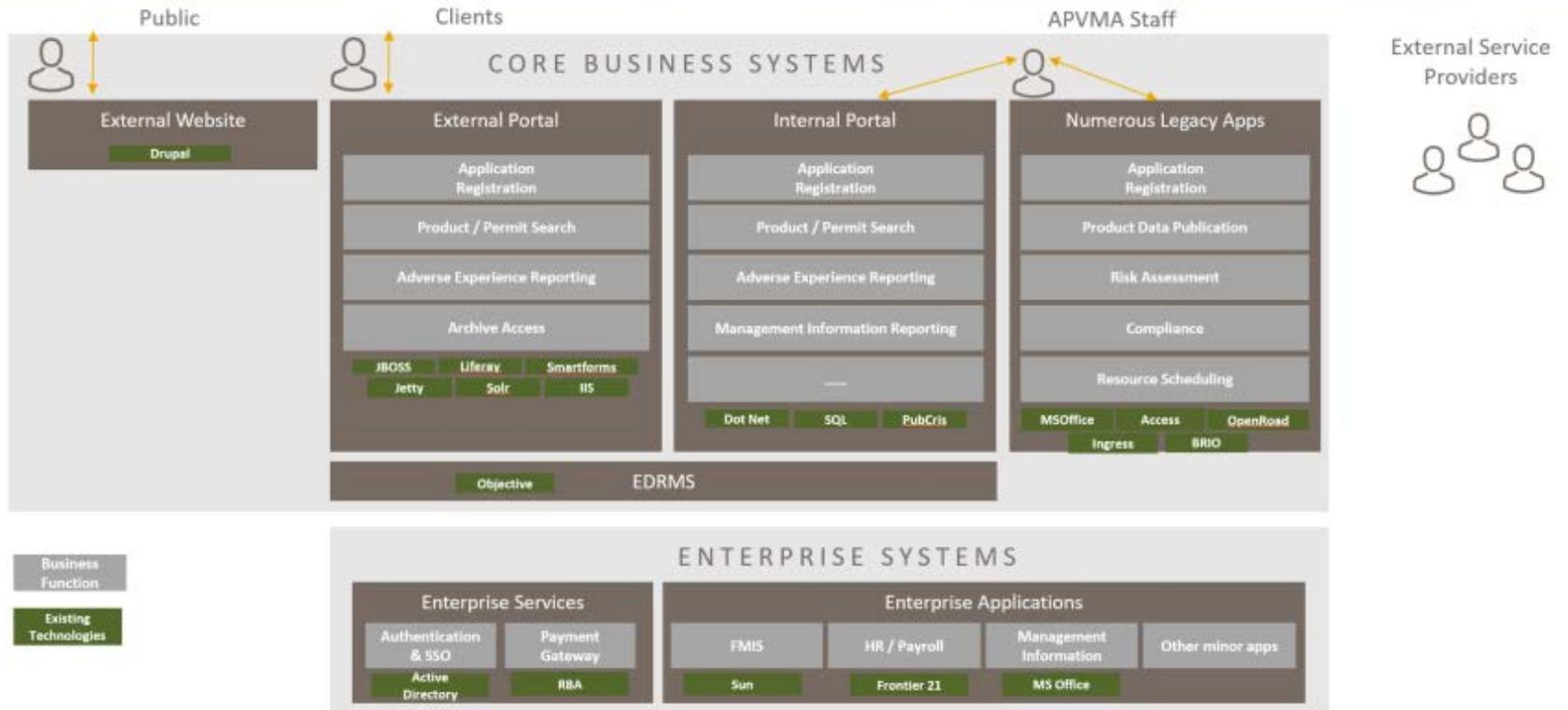


Diagram 3: APVMA ICT Architecture Current State



4.1 Infrastructure

The APVMA's infrastructure environment requires urgent investment. Unless change is initiated, the following risks will become increasingly difficult to manage:

- The fragmentation of ICT infrastructure cannot support integration across key business systems and the latest technologies.
- The current infrastructure solution and its manual processes limit APVMA staff and clients from meeting the growing demand for digital end-to-end processes and self-service capabilities.
- Without a stable and modernised digital infrastructure, teleworking is not optimal and does not cater for wider consumption.
- Piecemeal hardware refreshes over the last five years, due to internal budget pressures, have been insufficient to fund a refresh or stabilisation program of work and maintenance costs continue to increase.
- The current storage platform is at end-of-life, with little remaining capacity to support digitising up to 200 000 analogue records or scalability to support the future needs of the authority.
- Ongoing enhancements to safeguard APVMA and client information and data against cyber-attacks.
- Risk of loss or damage of information and data if it is stored in suboptimal locations or cannot be retrieved from obsolete technology platforms.
- Increasing difficulty to develop workaround solutions to mitigate disruptions to service delivery and manage rising maintenance costs.

4.2 Applications and Software

The APVMA is managing numerous legacy applications that are not integrated and highly bespoke, with many hosted on unsupported platforms— all of which are underpinned by diverse technologies and programming languages.

The bespoke nature of the APVMA's applications environment presents difficulties when trying to meet new business requirements or government commitments that require immediate implementation. The authority lacks application capability to support integration across multiple systems. For example, the product risk management assessment process has information managed and stored in various locations. This process also uses multiple off-system databases and spreadsheets to manage and store data with limited visibility and controls that are not ICT developed.

The software environment is lagging behind technology advancements, with many running unsupported or non-current application platform products. Some of these products are internet



facing and lack the functionality required to use current web presentation techniques. For example, APVMA's applications are not mobile friendly and cannot be accessed anywhere, anytime, on any device, or designed with dynamic webpages that can respond to the size and type of devices being used clients or staff.

4.3 Management of Information

The APVMA's Management Information platform was deployed in 2005 and is no longer supported or meeting evolving business requirements. In some instances, replication between the internal and external portal platform is impossible. The authority lacks a central database to store information once which can then be accessed via multiple systems.

The current manual intervention of information management practices is impacting business area's ability to make timely and accurate business decisions. Business areas are also copying information from existing information stores for their own reporting purposes. Extensive manual intervention to extract and manipulate critical data is leading to data integrity vulnerabilities and no accountability for a single source of truth. Implementation of a solution providing a single source of data across the authority's business domains will provide opportunities to unlock productivity gains through the development of analytical models and proactive and transparent reporting.

4.4 Digitisation of analogue records

The APVMA largely conducts its business using analogue records. The authority currently has up to 200 000 analogue files, of which a typical file contains, on average 300 double-sided pages, text and images in black and white or colour. Additionally, some files may also contain CD's, photographs, slides, label packaging, plastic sleeves, sticky notes, file dividers, and various bindings.

Many of these files relate to the following categories:

- Product data packs: Data submitted in support of an application (54 000)
- Product and active constituent records: Application and evaluation files (45 000)
- Corporate records: Legal, HR, Finance (16 000)
- Submission files: Data Submissions not attached to a file but are related to application or review (14 000)
- Permit files: Permit applications only (11 000)

The APVMA uses both on-site and off-site storage facilities to house its analogue records. The APVMA currently has 22 000 files stored on-site and over 175 000 files stored off-site. The onsite storage facilities are managed by the APVMA's Information Management (IM) team. The IM team will typically receive a records request through its ticketing system, the IM team will then search for the carton or file, lodge it in the Electronic Document Records Management System (EDRMS)



and notify the person that the file is ready for physical collection. However, not all analogue records are stored in the EDRMS post its migration from the internal portal.

The APVMA's offsite storage facilities are spread across three facilities. Retrieval of files from the off-site storage facilities is typically a next-business-day service that attracts a courier fees on each request. The APVMA's ongoing storage requirements come with ongoing management costs commensurate with occupied shelf space. The continued use and management of analogue records is hindering our ability to make improvements to productivity and performance. Currently, staff are unable to work simultaneously on an analogue client file, and in most cases, must wait until the file is transported from the off-site storage facility. The digitisation of records will be a critical component to mitigating further reductions in staff productivity and operational performance levels while the authority is establishing in Armidale.

Digitisation of analogue files and records as an objective of the digital strategy also progresses the authority's obligations to meet the government Digital Continuity 2020 policy to create and manage information in digital formats^{iv}.



5 Future state

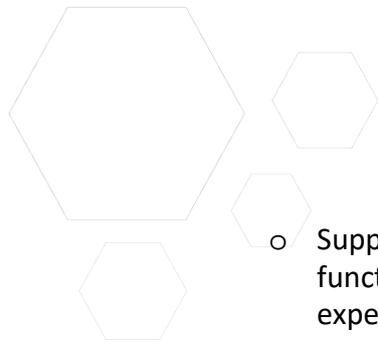
The digital strategy will enable the APVMA to perform as a world leader in agvet chemical regulation from regional Australia, delivering high quality decisions that are timely, science-based and proportionate to the risks being managed. The authority will reduce the regulatory burden placed on clients and industry and provide service delivery that exceeds their needs. The authority will become a government leader in organisational efficiency and effectiveness.

This can progressively be achieved through transformation of core business processes and systems to provide:

- A better customer experience through self-service, improved communications and APVMA having a single view of its clients.
- Increased staff productivity through automated process workflows, better business intelligence on workloads and process flows and fully integrated resource scheduling.
- Modern application platforms that improve productivity and reduce maintenance and support workloads and risks.
- Seamless integration of all business functions, applications, information and data.
- Adoption of fully online service models for clients that results in all APVMA records and communications being entirely digital.
- Digitisation of all existing APVMA records to enable online access to all current and historic records.
- Modernisation of the technology base to support a modern, flexible and devolved workforce.
- A scalable and flexible ICT environment that will meet the demands of APVMA's changing operating model.

To achieve this future state the APVMA will undertake a multi-stage, multi-year stabilisation, modernisation and transformation journey involving:

- Digitising existing APVMA records for online access.
- Immediate stabilising of the existing ageing infrastructure and applications to ensure they are sustainable in the immediate and near-term.
- Migration to modern, cloud- based ICT infrastructure services that will:



- Support the new business operating model, including resourcing of ICT support functions where the APVMA can reduce the reliance on internal high-level ICT expertise.
- Provide the tools needed to support a modern, flexible workforce, including full access to all business systems, data and records and voice, message and video communications anywhere, anytime and on any device.
- Be scalable to meet the long-term requirements of the APVMA.
- Incrementally transform core business applications using contemporary, cloud-based platforms that will deliver:
 - A single core business system covering all business functions excluding finance and HR/ payroll.
 - Comprehensive workflow, case management and resource scheduling.
 - A single view of a client's interactions with the APVMA.
 - Accurate, reliable operational data on which to make evidenced based management decisions.

5.1 Future state architecture

Core features of our future state architecture are:

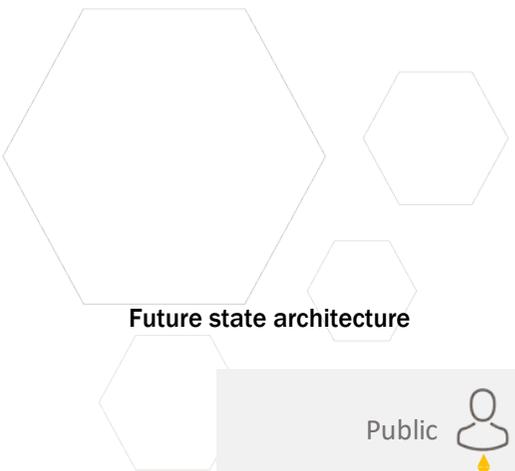
5.1.1 Core business applications

- A single customer relationship management (CRM) platform providing the functionality required for all core business functions.
- Design of business processes that can be fully digital from 'end-to-end', including customer interactions.
- Utilising the digitisation of information to improve access and search capabilities and support parallel work stream processing.
- Allowing external service providers to interoperate with APVMA business processes whilst maintaining appropriate security and control.

New or improved functionality to allow for:

- Online customer self service functions and automated customer communications.
- More effective resource scheduling, workload management and workflow monitoring.
- Reporting for staff and external service providers.
- Case management functionality providing a single view of client interactions.

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- Leveraging investment and capabilities in the existing EDRMS.
 - Replacement / retirement of the numerous off-system databases and spreadsheets that are non-ICT developed and managed.



Future state architecture

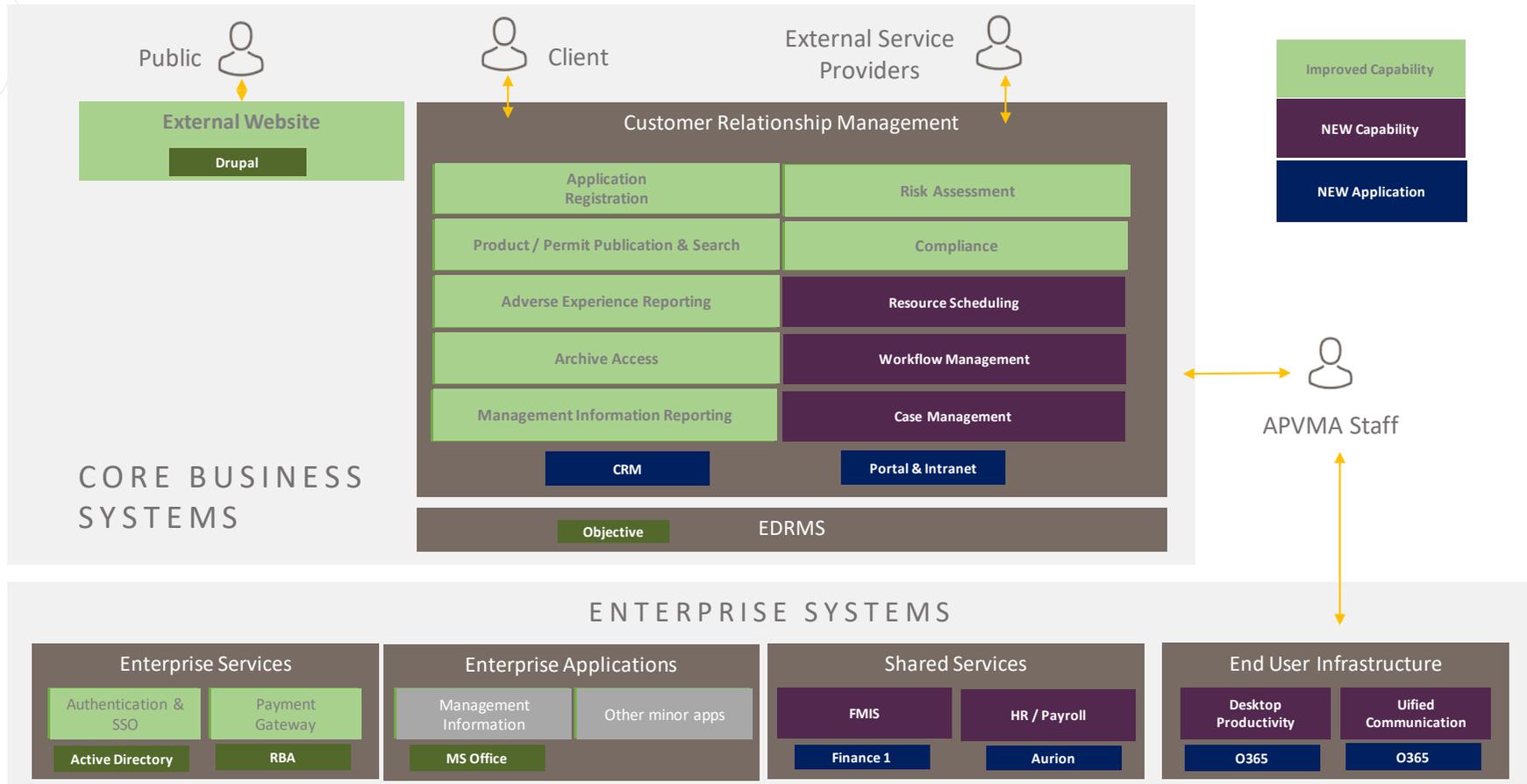


Diagram 4: APVMA ICT Architecture Future State



5.1.2 Infrastructure

- Ability for APVMA staff to access the network and all desktop and business applications anywhere, anytime.
- Provision of modern cloud-based desktop, communication and collaboration tools (O365 and unified communications) to support a flexible workforce including remote staff and external service providers.
- Existing end user infrastructure, business applications, portals and websites will be transitioned to cloud based infrastructure.
- Enhancement of the telecommunications network to support the new Armidale building and remote working.
- APVMA will own minimal physical ICT infrastructure (data centres, services, storage).
- All management of the ICT infrastructure will be provided by an external service provider with the potential exception of a small number of locally based personnel in Armidale.

5.1.3 Records management

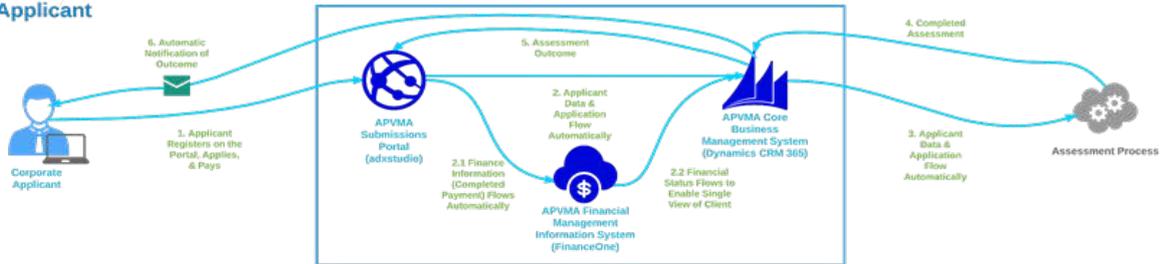
- We are working towards digitising records and making accessible and searchable online.
- Requires client applications to be submitted and internal documents and client communications to be digital.
- During transition, processes will be put in place to digitise any paper based records as soon as they are received by the organisation.

5.2 Example user journey

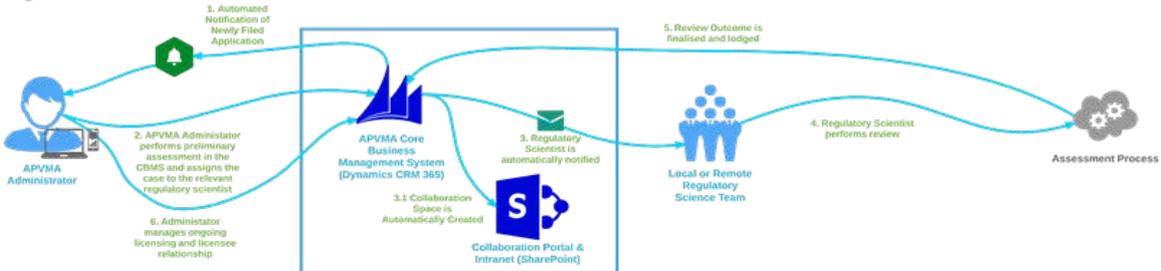
The scenario outlined in diagram 5 below, has been devised as the typical user journey for how the future state ICT environment will support improved business practices assuming a single customer relationship management system is built upon primarily Microsoft technologies (noting that a vendor selection process will be followed to select the most cost effective technology platforms).

APVMA User Journeys

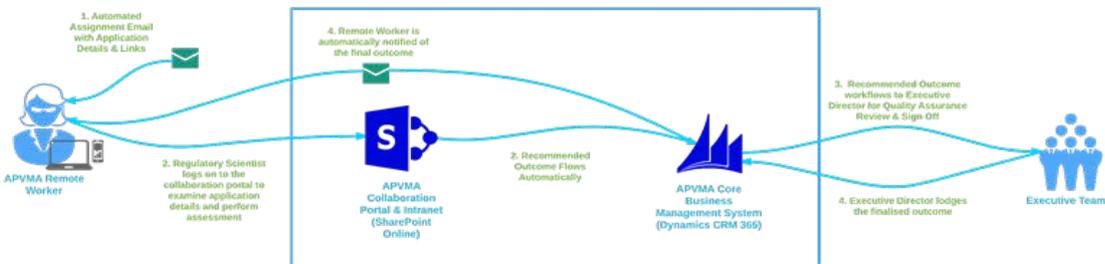
Application for Registration - Applicant



Application Registration - Registration Team Member



Scientific Assessment - Remote Regulatory Scientist



Performance Reporting - APVMA Executive

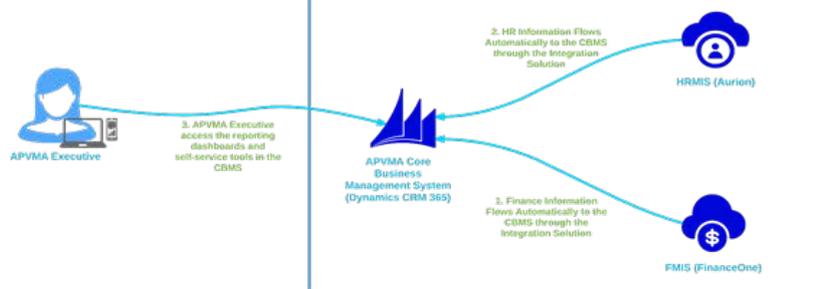


Diagram 5: APVMA User Journeys



6 Delivering benefits for the regulator, industry and government

Through an enabling technology program, the APVMA digital strategy will deliver benefits for the authority, the clients we service and government including:

- Improved clients experience.
- An effective and efficient modernised workforce from a regional area.
- Improved statutory processing timeframes.
- Increased staff satisfaction and productivity.
- Reduced regulatory burden on industry.

6.1 Benefits map

The benefits map captures and illustrates:

- The relationships between the business problem and program outputs.
- The outcomes that are expected from the successful implementation of the program outputs.
- The benefits that are anticipated to be realised because of those outcomes.
- How benefits will align to APVMA's strategic objective(s).

See diagram 6 below for the APVMA ICT Benefits Map.

Digital Strategy Benefits Realisation Map

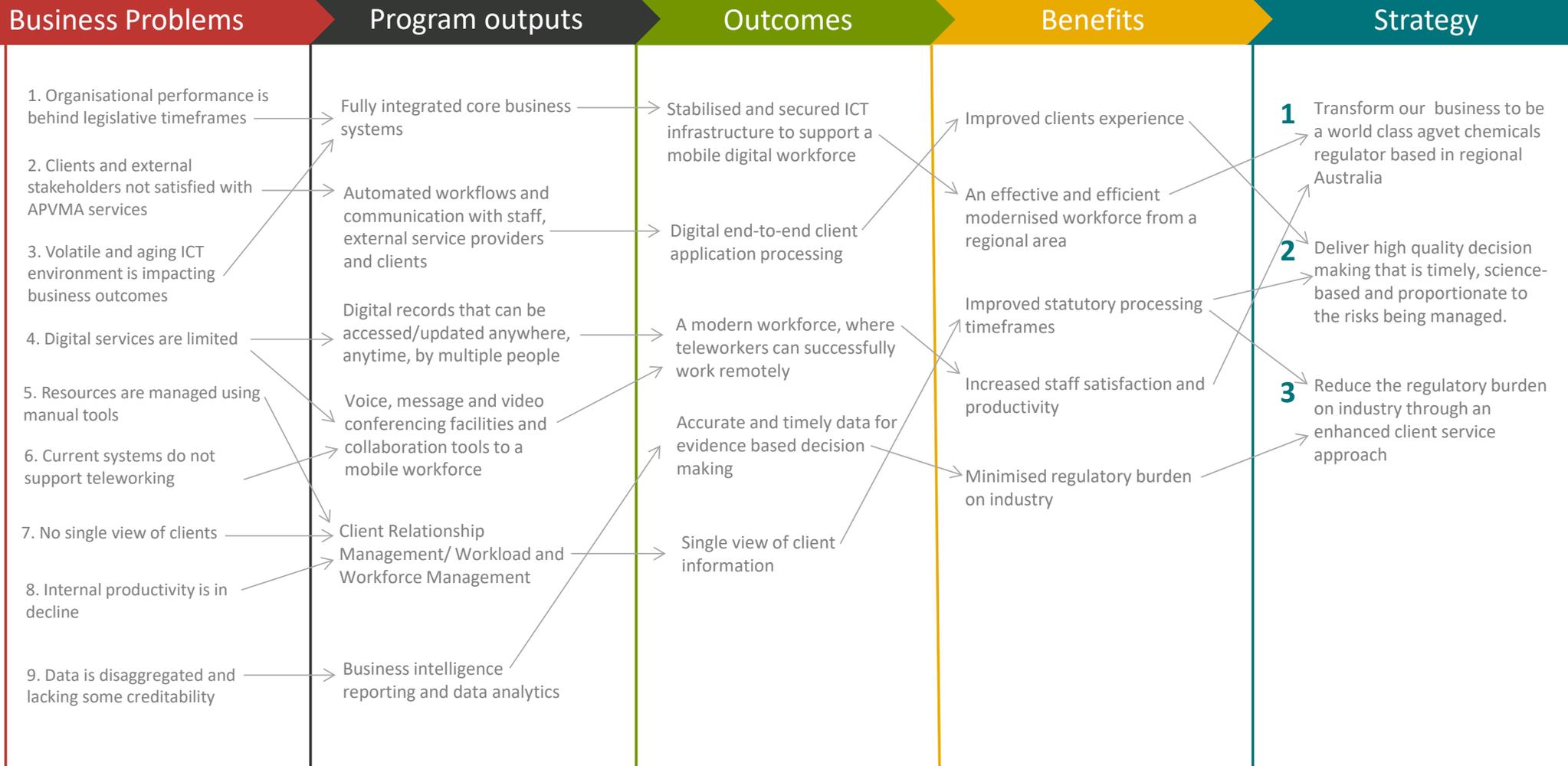


Diagram 5: Digital Strategy Benefits Realisation Map

References

ⁱ Department of Agriculture and Water Resources, Cost benefit and risk analysis of the potential relocation of the APVMA, Final Report, 2016. Available online from www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/apvma-cost-benefit-analysis

ⁱⁱ Australian Pesticides and Veterinary Medicines Authority, Operating model for APVMA function is Armidale, available online from <https://apvma.gov.au/node/28756>

ⁱⁱⁱ National Archives of Australia, Digital Continuity 2020 Policy, available online from <http://naa.gov.au/information-management/digital-transition-and-digital-continuity/digital-continuity-2020/index.aspx>

^{iv} National Archives of Australia, Digital Continuity 2020 Policy, available online from <http://naa.gov.au/information-management/digital-transition-and-digital-continuity/digital-continuity-2020/index.aspx>