



Driver & Vehicle
Licensing
Agency

Information
Technology
Services

DVLA IT Strategy



2017-20



Interactive document

Simpler | Better | Safer

**Never static
or still.
A place for
innovation and
inspiration.**





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101 Drivers

Key drivers | Solution pillars

Key drivers

Move off majority of legacy within 3 years

Our current legacy systems have grown organically over the last 20+ years. They are overly complex, costly to run and difficult to change. The migration onto a new loosely-coupled, component based architecture led by our in-house teams will deliver the flexibility and responsiveness required.

Hit our cost reduction targets

By 2019/20, we are projecting a 40% reduction in total ICT spend when compared with 2017/18, meeting both our Comprehensive Spending Review commitments and wider efficiency targets. We will achieve this by driving efficiency to reduce cost.

Rebalance operating cost vs change

Over 75% of our ICT spend is on keeping the lights on. The cost to maintain our systems must be rebalanced, to enable change to be delivered whilst meeting the cost reduction targets.

Secure by design

We will protect the personal data of citizens that use our services at exemplar levels of security.

Contribute to Motoring Services


We are part of the wider DfT family and will collaborate to drive opportunity for technology convergence and sharing of best practice.

Legacy systems have grown organically over **20yrs**


Move off majority of legacy within **3 years**

Driving efficiency to save **40%** over 3 years


Solution pillars




Move off majority of Legacy within 3 years




Hit our cost reduction targets



Rebalance operating cost versus change



Secure by design



Contribute to Motoring Services

Systems

People

Process

102 Systems

Key tenets | Target architecture | Building blocks of technology solutions
On-premises modernisation | Architectural principles

Key tenets

User centric

We will focus on user needs, whether that is an internal user, a citizen or an organisation.

Commodity first

Increasing elements of IT are commoditised. The use of commodity enables value to be delivered early and frees up resources to be focused on value add activities. This includes moving to commodity cloud where it makes sense from a security and cost perspective.

Loosely coupled and component based

The existing legacy estate is monolithic, which means it is restricted to its proprietary technology, cannot be scaled individually, and results in much longer deployment cycles. Disaggregating these monolithic systems using a loosely coupled and component based architecture allows us to respond quickly to change.

Open standards

The use of interoperable open standards promotes openness and portability, and reduces vendor lock-in. It provides us with greater choice around tools, people and processes. This will help to lower risk and increase innovation.

Automated

Manual processes and interventions add time, cost and risk. We will embrace automation to allow for repeatable builds of software defined environments from templates, frequent release cycles and support for continuous delivery.

Self healing

We will build solutions that automatically detect and recover from failure without manual intervention. Errors will be handled in a controlled fashion allowing systems to continue to operate normally (graceful degradation). We will implement best practice 'design for availability' patterns such as Circuit Breakers.

Auto scaling

We will make use of auto scaling to enable our solutions to scale capacity up to meet demand spikes and back down when not needed.

Real time

We will build solutions that handle requests in real time, moving away from existing batch-based processes.

API first

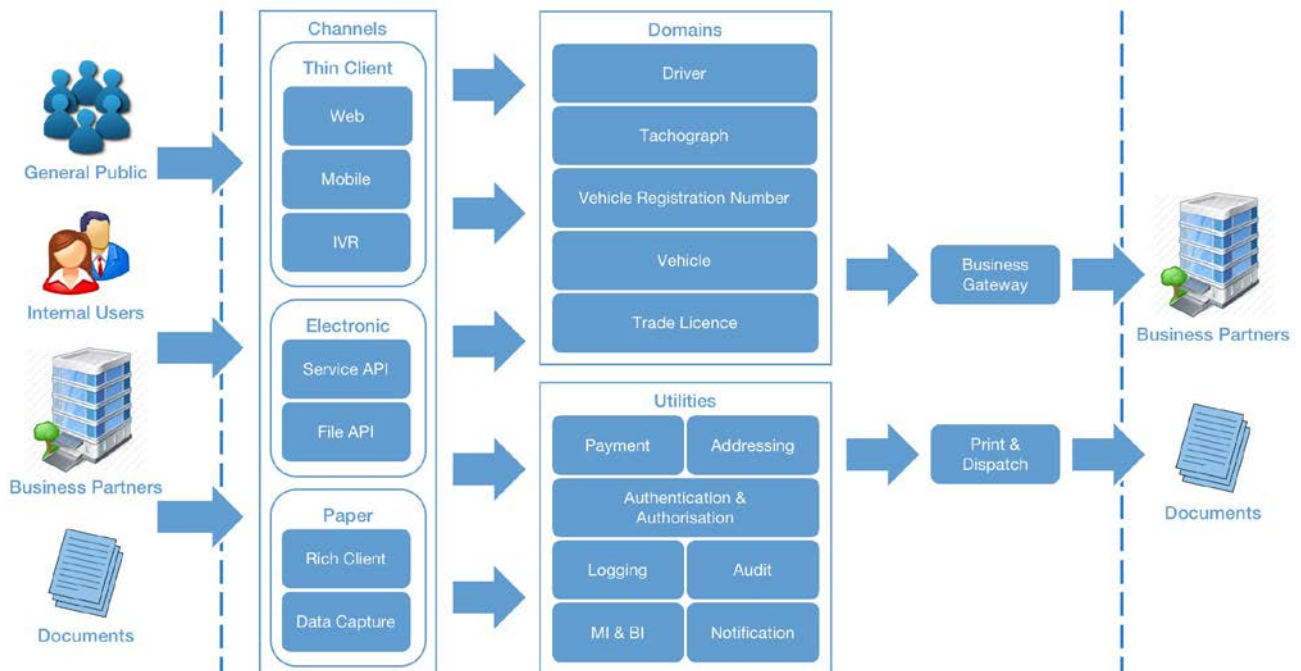
We will expose our services and data using standard APIs to allow business and government to develop new services on top of ours, fully controlled under data protection legislation.

Services available in line with expectations

We will accelerate our service transformation by providing more services online as part of a wider, user-focused service offering. As we drive forward this channel shift, these services will be made available in line with customer e-commerce expectations.

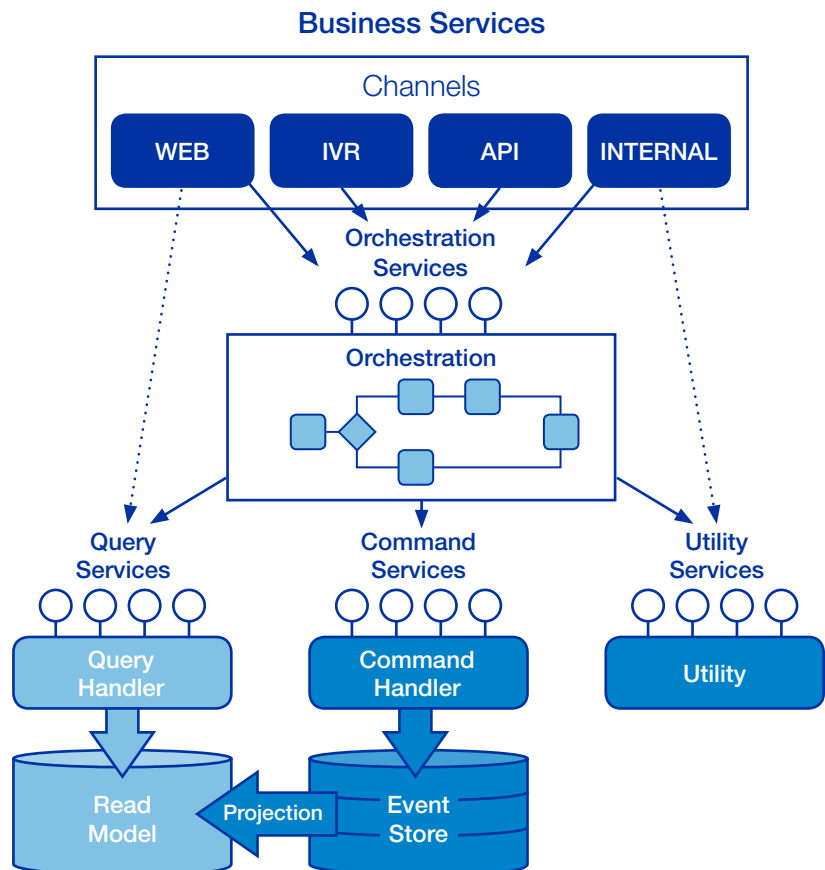
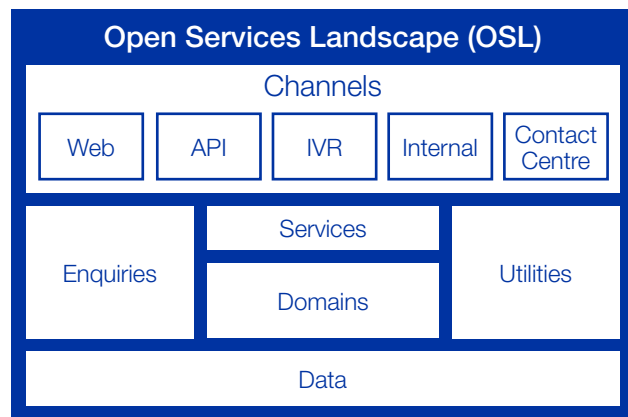
Target architecture – Open Services Landscape (OSL)

- The Target architecture enables channels across the agency to evolve and be replaced in a flexible and timely manner
- It provides a shared architecture with reuse of services and maximum use of commodity IT
- It supports continuous improvement of services and rules to meet user needs and expectations
- It underpins DVLA's role in the wider Motor Services Strategy and will be shared across DfT.



Building blocks of technology solutions

- **Application Services** are the 'building blocks' of technology solutions
- These services are exposed via standard APIs and promote a loosely coupled architecture
- The four types of service are:
 - **Orchestration** – coordinates lower level services to provide a coherent services to channels
 - **Command** – executes business logic to change the state of the underlying domain
 - **Query** – provides filtered views of data optimised for read access
 - **Utility** – provides access to local and external services provided 'as a whole' e.g. Payments, Addressing, Logging.



On-premises modernisation

Where possible, elements of our on-premises estate will be quickly transformed and moved to commodity cloud.

Other elements will perpetuate for longer, and will be optimised to speed up the transformation. This will be carried out as follows:

- We will align our on-premises infrastructure capability with our cloud environments, where infrastructure is virtualised and programmatically defined
- The move to modern supported infrastructure enables our capability, tooling and processes to be standardised across both local and cloud environments
- The simplification of our on-premises IT services will drive efficiencies and reduce cost, accelerating the transformation to public cloud.

Architectural principles

The IT Strategy is underpinned by a set of technology architecture principles, that provide more detailed guidance to projects going forward.

Long Term Focus – Technology solutions will be based on strategic intent not on short term aims.	Data Relevance – Data must be business relevant and necessary as per legislation.
Non-proliferation of Technology – Technical diversity will be managed in order to control complexity and cost.	Data Vocabulary – Data definitions and vocabularies will be consistent throughout the Agency.
Commodity First Solutions – Where business requirements allow, commodity solutions are preferred over bespoke solutions.	Master Data – All data will have a master copy providing a ‘single source of truth’.
Simple Solutions – Technical solutions will be as simple as possible. Where technical complexity exists it will be self-contained and hidden whenever possible and economically viable.	Confidentiality & Integrity – The confidentiality & integrity of data will be maintained in line with its business use and identified risk.
Flexible by Design – Solutions will be loosely coupled and component based by design in order to provide flexibility and scalability.	Secure by Design – Security is considered and embedded into business requirements, business logic, application, data and technology.
Exploit Metrics – Application & Technology Services, Processes and Components will be measured to enable appropriate monitoring, cost calculation and informed decision making.	Non-functional Requirements Matter – Non-functional requirements should be treated with the same level of importance as functional requirements.
Reusable Services – Solutions should provide and/or consume services that are reusable across the agency.	Continuous Deployment – Infrastructure and applications will be designed to support continuous and automated deployment.
Automate Processes – Processes will be automated end-to-end including integrations with customers and partners wherever possible.	Design For Availability – Solutions will handle errors in a controlled fashion and continue to operate normally (graceful degradation), processes will identify failure as early as possible.
User Centric – Services will be built focused on the needs of the user consuming the service.	Build for Motoring Services – Services will be built with reuse across the wider DfT family in mind.

103 People

What this means for our people | People vision | How we will do it
People themes | Organisational structure | Level 1 organisation | Key facts

What this means for our people

We will offer a modern and professional workplace that enables people to do a great job

We want a working environment (people, management, processes, systems, tools, estate) which supports the civil service values and behaviours.

We want our leaders to be inspiring, confident and empowering. An environment where an individual can make a difference and where our people feel valued. We want people to feel proud of being part of ITS and focused on providing an outstanding service to our customer.

The growth of digital services, stabilising IT services, moving to a new IT platform and the development of new business opportunities, will have a significant impact on the number and types of jobs we need, the skills our people require and on other things like grade mix. We want to maximise the potential of the people we already have and grow our own internal capability through investment in them.

We intend to re-design our operating model and mobilise a new organisation structure that will support the delivery of our future services. Our focus will be on acquiring talent and re-skilling our current workforce where viable, to move into newly shaped roles needed to deliver our strategic plan and to realise new opportunities.

We will work with our colleagues both within the agency, our wider DfT family and the rest of the civil service to share our experiences and expertise.

Our people

- As we embrace new technologies and new ways of working, we will prioritise and invest in up-skilling our staff to deliver the changes
- We will recruit significant numbers of internal people over the lifetime of the strategy, with a focus on technical skills
- We will increase individual accountability and personal empowerment
- We will maintain around 10–15% resource external to the agency:
 - For short-term specialist resource
 - To manage peaks based on demand
- All key new systems will be developed and managed by permanent staff, augmented where necessary by external resource.



How we will do it

Our team will be:

Collegiate

We are part of many teams: functional, agency, department, Civil Service. We will endeavour to help our colleagues in an open and positive way.

Aware

We will understand what services we provide and the direction we are moving in, and why we make a difference.

Empowered

Everyone will know their sphere of control and will be able to operate within that without the need for supervision.

Skilled

We will have the skills needed for the services we plan, build, run and control.

Evolving

We will develop ourselves for the future, both personally and as a team to meet the upcoming challenges.

People themes

Implement an effective and efficient operating model

Links to Business Strategy

Our goal is to realise the vision of an insourced IT function, that can deliver the transformation and ongoing service needed to support the business and it's 2017-20 strategy as well as that of the wider DfT family.

What we want to achieve

A new operating model and organisation structure that offers processes that deliver transformation from a legacy IT estate to new platforms and support continuous improvement.

We will achieve it by:

- communicating proposed changes with all of our people
- engaging our people in the process of design where it is beneficial and relevant to do so
- using fair and open processes for selection to implement the new structure, working with our HR colleagues throughout the selection process
- identifying the right talented leaders for the senior management team
- creating role profiles and job descriptions for all roles to set clear expectations of delivery requirements
- creating roles with accountability and making that visible to everyone.



Attracting great people

Links to Business Strategy

To deliver DVLA's challenging agenda, we must attract, select and retain great people with the right attitude, behaviours and skills required to deliver and continuously improve our services.

What we want to achieve

Develop an IT attraction and recruitment approach that uses the ITS brand to attract the best technical talent to DVLA, using selection techniques that are engaging and effective and provides a highly skilled technical and digital workforce.

We will achieve it by:

- developing an ITS brand to be used through all recruitment and attraction campaigns
- identifying the best creative advertising channels for external campaigns to reach the right talent
- maximising the flexibility of the recruitment process to create innovative selection and assessment processes relevant to the role
- working in partnership with local Universities, developing relationships with others across South Wales
- supporting HR colleagues by participating in careers events at local schools and colleges, selling the benefits of working in ITS at the DVLA
- evangelising the great work we do through presentations at appropriate events within government, private sector and online media.



Growing our skills and talent

Links to Business Strategy

We need a professional workforce with the right skills. We require high quality leaders/managers with the capability to lead change.

Insourcing our IT and continually increasing our digital service offering mean that we need to enhance our internal capability so that we can confidently define, create, operate and support the services we build, while reducing our reliance on external resource.

What we want to achieve

We will identify, develop, engage, retain and deploy our talent. A strong cohesive leadership team, setting the strategy and leading the organisation through continuous improvement. They will empower agility, decision making and accountability in their people to improve delivery of our services.

We will identify, capture and measure our existing digital skill and future requirement, establishing an approach to attract, develop and retain those skills. We want people who are skilled, respect other people's skills and look to improve their own.

We will achieve it by:

- continuing to utilise recognised Leadership and Management development programmes to grow and enhance our leadership capabilities
- taking advantage of apprenticeships and work placements, both inward and outward, to help us attract future talent and give our own staff a greater range of practical experience
- utilising a talent management approach at all grades, identifying and nurturing talent to create succession plans and development paths where we identify the right potential
- adopting a rigorous internal development process; all staff will have a personalised development plan, linked to their career path, with opportunities available to them that allow staff to realise their potential
- using a mixture of classroom, industry-standard and computer-based training, allowing staff to take more control of their learning.



Creating career paths

Links to Business Strategy

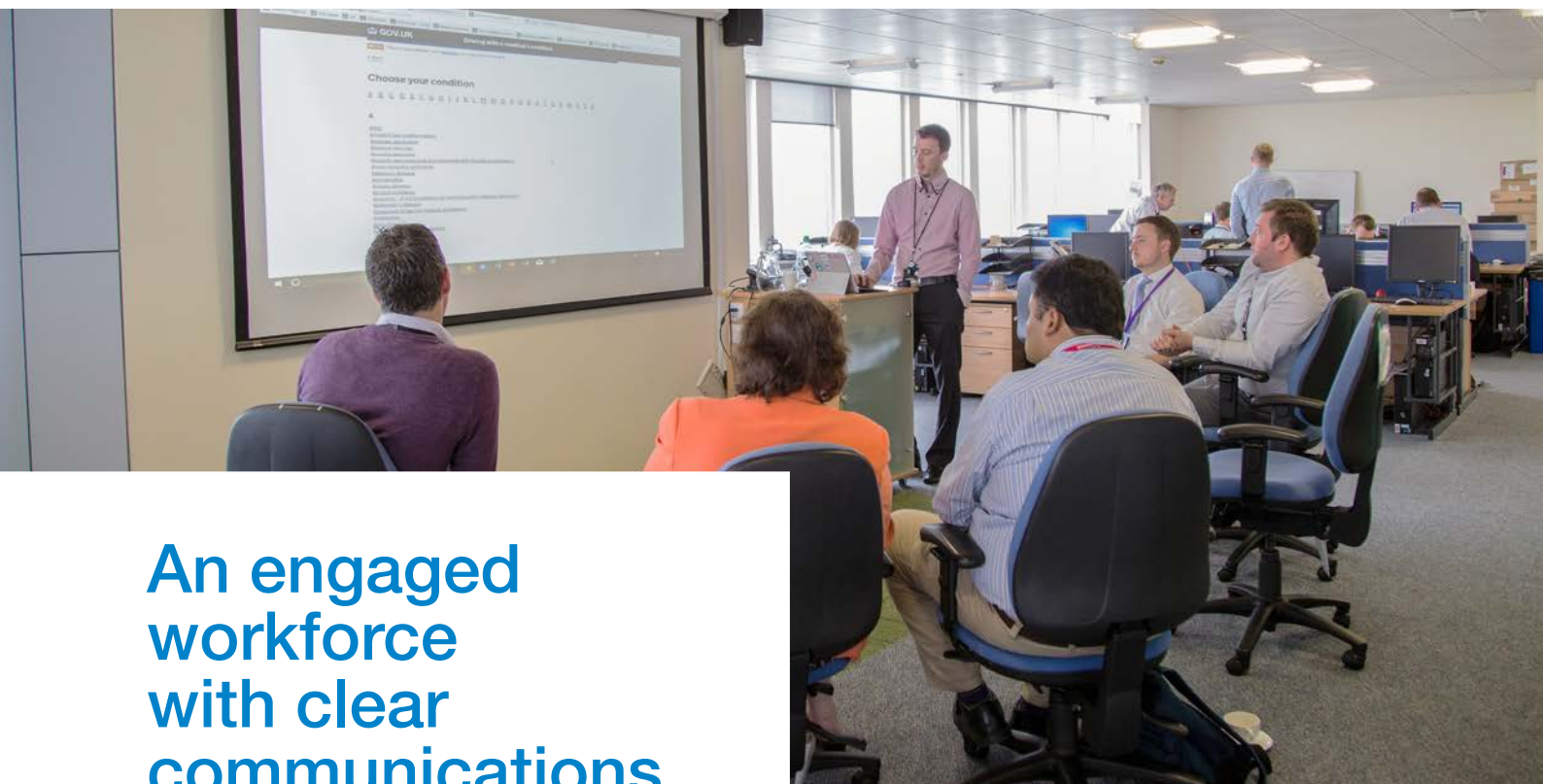
We need a professional workforce who have the skills required to meet our current and future needs. Insourcing of our IT and more digital services mean that we need to build our internal capability, reducing our reliance on external resources except where that makes sense to do so.

What we want to achieve

To be a leading example of an employer which enables its workforce to sustain higher levels of personal achievement and career aspirations, developing a workforce fit for future challenges.

We will achieve it by:

- identifying and define clear career families within ITS
- providing a map which clearly defines career path options within and between each ITS career family
- implementing a succession planning process which develops pools of skills to future proof our ITS workforce and provides managers and leaders of the future
- creating a mentoring network to support staff on their career development journeys
- creating a coaching network to support and develop staff and managers to maximize their potential
- creating a technical grading structure that recognises and rewards professional IT development and expertise
- ensuring all colleagues have regular reviews on career aspirations with their line manager
- providing opportunities to obtain experience in the next roles through one off tasks or assignments.



An engaged workforce with clear communications

Links to Business Strategy

To become the best at what we do will require engaged people who are performing to the best of their ability.

What we want to achieve

An environment where an individual can make a difference and where our people feel valued. We want people to feel proud of being part of ITS and focused on providing an outstanding service to our customers.

We will achieve it by:

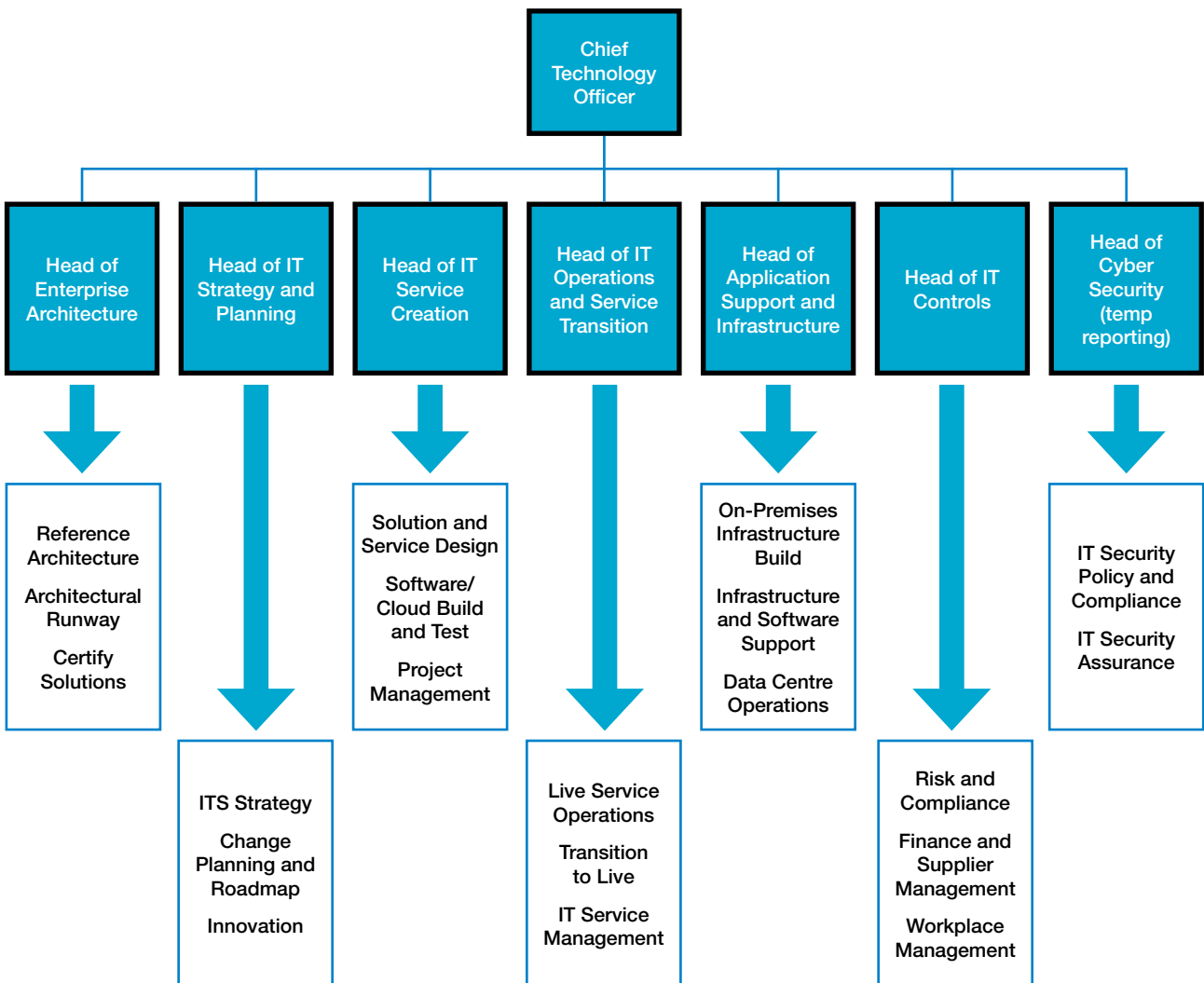
- creating a communication framework which provides up to date and relevant information relating to developments within ITS and the wider agency and department
- implementing staff engagement plans within each capability area, focused on improving natural engagement activity
- publishing a directorate engagement plan which focuses on the engagement activity of senior leaders within the directorate
- creating an environment which makes it safe for staff to challenge and invites ideas and suggestions for continuous improvement of our services to our customers
- creating a toolkit of reward options to recognise outstanding contributions and celebrate success
- developing a modern working environment, providing the right tools to do the job
- bringing to life the leadership statement and the Civil Service Code, turning it into action in all areas.

Organisational structure

We have organised ourselves to align responsibilities and support transformation

Plan	Build	Run	Control
IT Strategy Formulation	Portfolio Development	Operational Management	People
IT Business Strategy	Establish Portfolio & Product Strategy	Change Management	Workforce Planning
IT Capability Strategy	Manage Product Backlog	Configuration & Asset Management	Capability Development
Strategic Performance	Product Resource Management	Capacity Management	Manage Performance
IT Brand Management	Product Delivery	Availability Management	Communications Management
Portfolio Management	Solution Architecture	Service Continuity	Supplier Management
Portfolio Definition & Planning	Business Systems Analysis	Service Catalogue	Survey Market & Identify Suppliers
Demand Management	Solution Design	IT Operations	Supplier Evaluation & Selection
Portfolio Performance	Build/Configure Services	Service Desk	Contract Management
Innovation	Test Management	Request Fulfilment	Supplier Performance Management
Innovation Management	Service Architecture	Access Management	Finance
Enterprise Architecture	Service Transition	End User Compute	Budget Preparation
Develop Reference Architecture	Service Acceptance	Event Management	Tracking & Reporting
Develop Architecture Runway	Release & Deployment Management	Incident Management	Budget Approval
Govern Solutions		Problem Management	Management & Control
		Service Performance Management	Quality & Assurance
		Service Level Management	Audit & Compliance
		Report Service Performance	Manage Continuous Improvement
		Manage Business Feedback on IT Services	Knowledge Management
		Manage Business Relationships	Risk Management
		Continuous Service Improvement	Cyber Security
		IT Support	Cyber Security Policy
		Manage Data	Cyber Security Compliance
		Manage Networks	Cyber Security Operational Assurance & Testing
		Manage Operations Centre	Cyber Security Monitoring & Event Management
		IT Facilities Management	Cyber Security Consultancy
		Application Maintenance & Support	Cyber Security Management & Procedural Controls

Level 1 organisation



Key facts

The organisation has been structured to be flexible and responsive.

We support 8 concurrent streams of new technology software engineering, with a capability to grow by 50% (to 12 streams) without significantly changing organisation structure.

We support 5 concurrent streams of legacy software engineering, which will be deprecated over time with the move off legacy.

We will organise our build resources to optimise engineering throughput, decoupled from portfolios and business teams, focussing on the highest priority, highest value deliverables to achieve our transformation objectives.

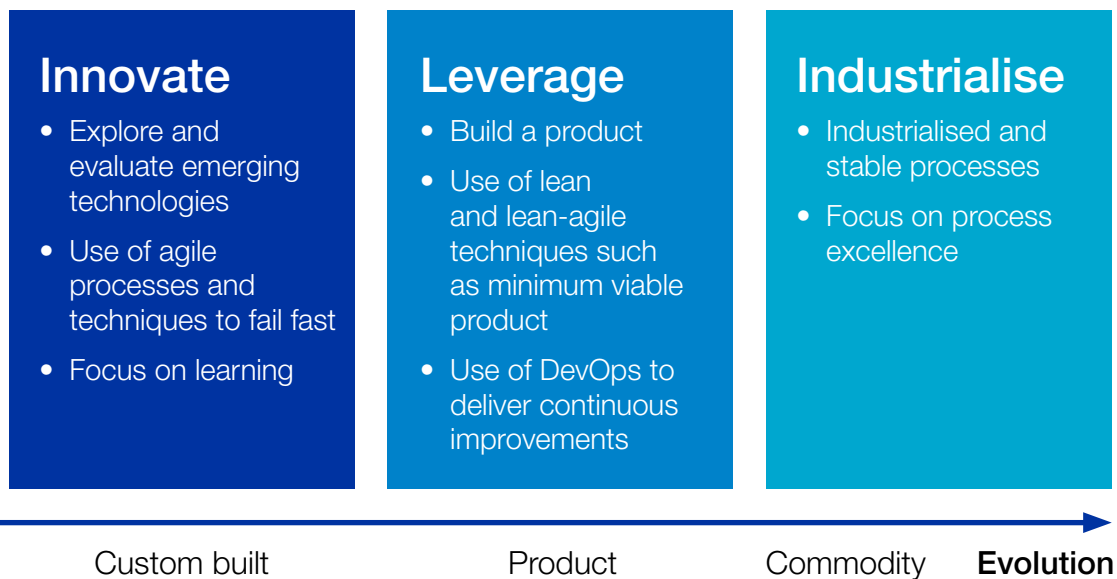
104 Process

Process | Reference architecture | Technical governance

Process

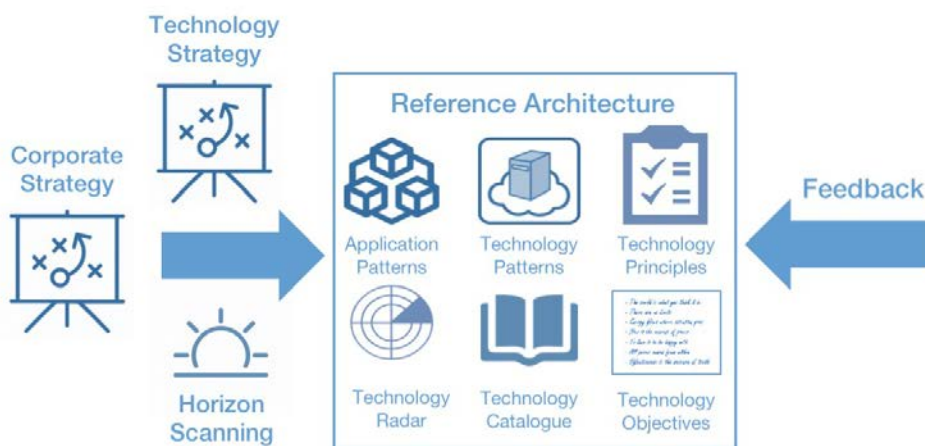
We will operate a world class service using industry ITIL best practice approach.

We recognise that no one-size process fits all, and support a tri-modal structure.



Reference architecture

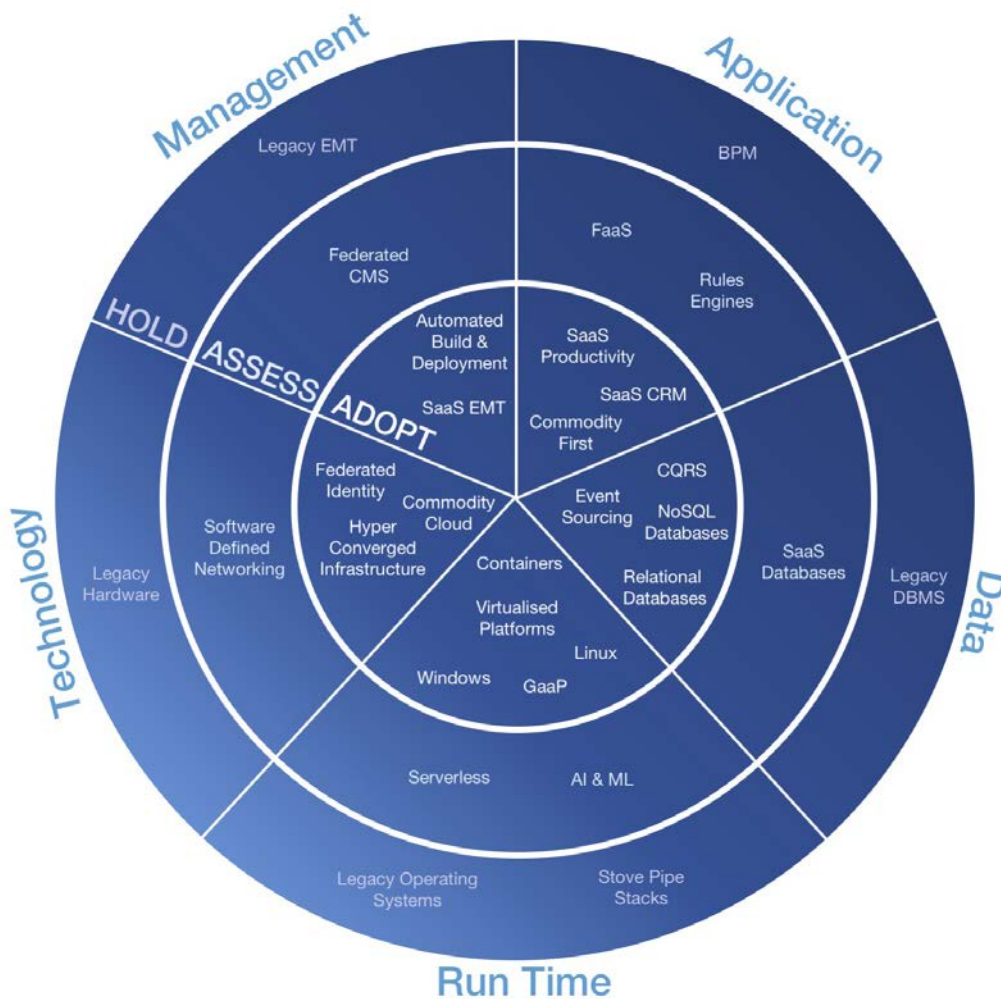
We will communicate and share our reference architecture across the wider DfT



- Reference architecture contains the building blocks for solutions, providing consistency and forming the basis for governance.
- Reference architecture continually refined and maintained through the IT and Business Strategy, horizon scanning and feedback from Build and Run, ensuring it remains relevant, pragmatic and deliverable, and supports the needs of the organisation.
- When we build our new services, we always lay the foundation for our transformation and new technology. Changes to the legacy estate are limited to legislative delivery (based on timescales), changes required for transformation or essential upgrades such as security compliance.

Technical governance

The Tech Radar clearly communicates technology product choice and direction published on a quarterly basis



There are three rings on the radar:

- **Adopt** – Technologies in adopt are those that must be used and the ‘de facto’ DVLA standard.
- **Assess** – Technologies in assess are those gaining traction in the industry that we believe may add value. They will be trialled in a controlled manner to understand their impact before any widespread adoption.
- **Hold** – Technologies in hold must no longer be used.

This process enables technical standards to emerge and be managed.

105 Moving off legacy

Moving off legacy | Integration via events

Moving off legacy

There will be an incremental peel off (as opposed to big bang migration) from legacy to OSL

There are a number of general principles being followed in moving off legacy:

- The preference is to migrate functionality (including data) in its entirety to a new platform, instead of integrating back to legacy
- Where business processes and priorities don't allow migration we will integrate with legacy systems via events
- There is only one master for system of record data.
- Services will be rationalised when migrated to remove functional duplication in legacy
- Services will be re-engineered to reduce the need for manual intervention when migrated
- Services will be decommissioned on legacy platforms once migrated
- An integrated view of data across OSL and legacy is provided in an enquiry data store.

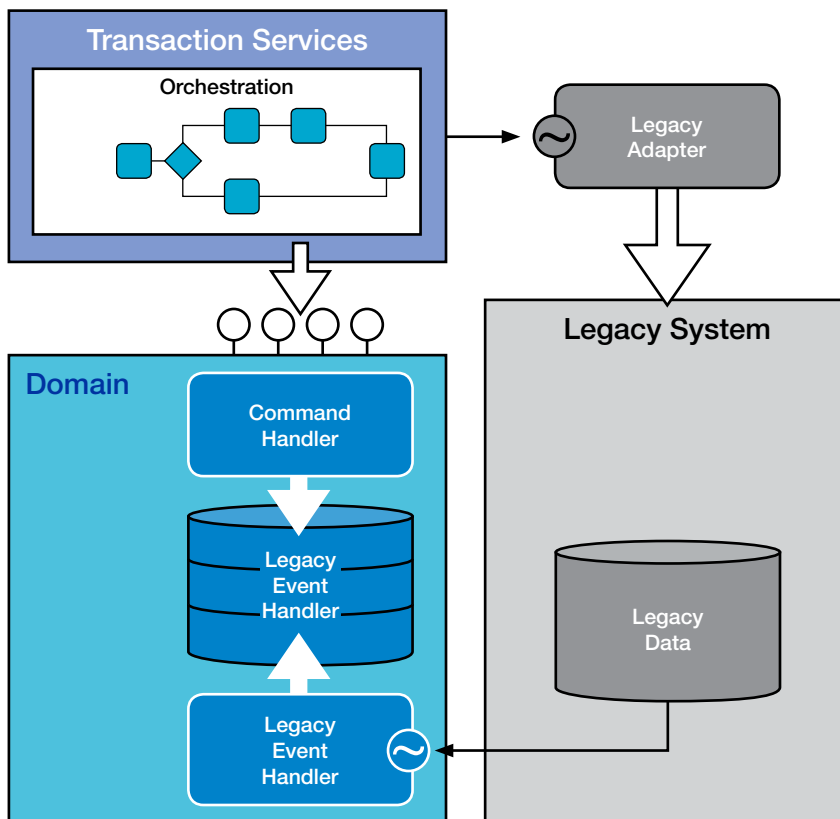
Integration via events

Where all required functionality (including data) cannot be migrated, we will integrate via events

- The migrated service sends events to feed data back into the legacy systems
- Updates from legacy systems will also need to be transmitted back to OSL.
- Legacy Adapter receives OSL events and data, converts data to legacy format and invokes legacy functions within the legacy system
- Updates to the legacy databases will trigger legacy events to be issued
- Legacy event handlers within the domains will catch events from legacy systems and append them to the event store
- Events are immutable, therefore appending events received from legacy systems, as a result of OSL sending an event to the Legacy Adapter, MUST NOT change the state of the domain.

Pattern highlights:

- Asynchronous (Legacy not 24x7).
- Service orchestrator sends OSL event to Legacy Adapter upon successful completion of transactional service



106 Summary

IT Strategy - Summary

IT Strategy – Summary

Key drivers

We will move off the majority of legacy within 3 years, enabling our systems to be modern, flexible and responsive. We will drive efficiency to hit our cost reduction targets. We will rebalance operating cost versus change. We will protect the personal data of citizens by ensuring all our services are secure by design. We will contribute to Motoring Services as part of the wider DfT family.

Our systems

A number of key tenets underpin how our systems will be created. Our target architecture is designed to offer reuse of services and maximum use of commodity IT. It consists of building blocks that can be rapidly assembled and changed over time. Our on-premises estate will be simplified and optimised to accelerate the transformation to commodity cloud.

Our people

We will offer a modern and professional workplace that enables people to make a difference and feel valued. We will prioritise and invest in up-skilling our staff to deliver the changes, whilst recruiting significant numbers of internal people with a focus on technical skills. All key new systems will be developed and managed by permanent staff.

Our process

We recognise there is no one-size fits all approach, and will adopt the most appropriate process for delivering and supporting our services as they evolve to an industrialised state. Our reference architecture guides and informs solutions. Our technical governance process facilitates rapid decision making and encourages innovation, whilst maintaining oversight and adherence to the core drivers and tenets.

Moving off legacy

There will be an incremental peel off from legacy. The preference is to migrate functionality (including data) in its entirety to a new platform. Where this is not possible, we will integrate via events.

DVLA IT Strategy

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