Australian Government
Australian Taxation Office

Australian Taxation Office

Strategic direction for APIs: How APIs will be designed and delivered as demand increases

FTA Community of Interest meeting – Inventory of Tax Technology Initiatives

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Digital Delivery | Enterprise Solutions & Technology
Australian Taxation Office

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Our vision and environment

We are a leading tax, superannuation and registry administration known for our contemporary service, expertise and integrity.

Government:
Strategies and drivers
Robust governance and standards

Purpose
The ATO's purpose is to contribute to the economic and social wellbeing of Australians by fostering willing participation in the tax, superannuation and registry systems

ATO Corporate:
Strategies and plans
Vision for future client experiences

Global influences:
Tax 3.0
Transformation trends

Market forces and ecosystem partners:
e.g. Digital Service Providers
Financial Institutions
International Jurisdictions
Insolvency Practitioners
Government Agencies
Industry Associations

Technology and Data:
Principles for design and usage
Technology standards
Cyber Security

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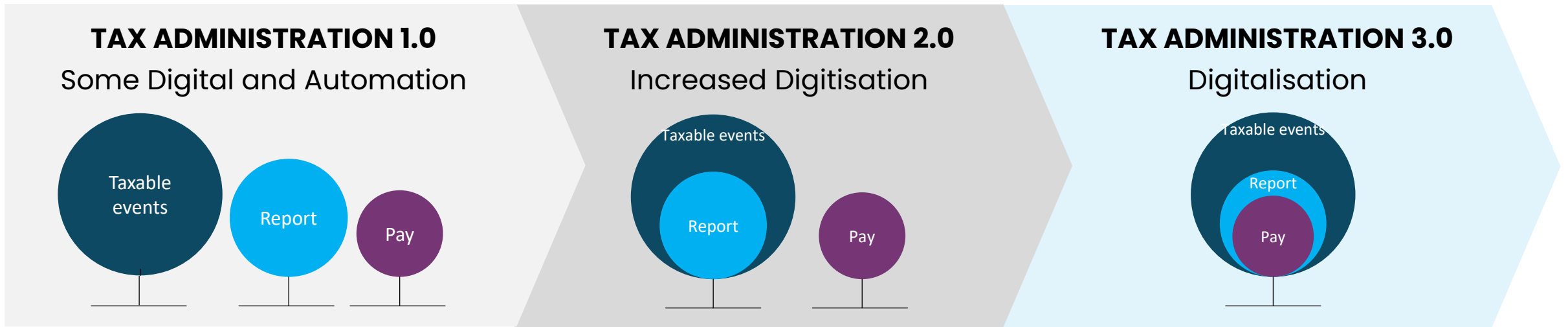
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Our changing role in the Australian economy

- Tax administration is no longer a static function.

- The ATO has relationships with other agencies.

- Taxpayer data is increasingly being shared across agencies.

- The ATO actively engages in whole of government foundational changes.

- The ATO collaborates with ecosystem partners to deliver mutual benefits (e.g. Software developers, Agents, Industry forums etc).

The Australian eInvoicing Peppol authority

ATO digital transformation journey

Progressively shifting from Tax 1.0 to Tax 3.0

TAX ADMINISTRATION 1.0
Some Digital and Automation

Taxable events

Report

Pay

TAX ADMINISTRATION 2.0
Increased Digitisation

Taxable events

Report

Pay

TAX ADMINISTRATION 3.0
Digitalisation

Taxable events

Report

Pay

- Reporting and lodgments occur at pre-determined intervals.
- Payments occur at specific periods or following an automated or human assessment.

- Automated reporting and lodgment through business management software.
- Increased partnerships with software developers.
- Introduced a government Digital Identity.
- Validated data sharing, e.g. prefill data for lodgments.

- Payments to the time of taxable events or at 'right-time'.
- Smarter fraud prevention and early detection of non-compliance.
- Support those unable to be digital.

Progressively shifting from Tax 1.0 to Tax 3.0 – in practice

Evolution of our current PAYGW reporting regime – an ATO example of the shift to digitalisation

TAX 1.0
Manual reporting

- Forms driven
- Periodic, aggregated, historical data
- Prone to errors
- Manual, slow and costly
- Limited transparency & certainty
- Retrospective (partial) risk detection & treatment

TAX 2.0
Electronic forms

- Reduction in paper and processing time
- Some validation and visibility of data
- Still based on cyclical reporting regime
- Still prone to errors
- Large degree of effort still required for lodgment

TAX 3.0
Event based reporting

- Event based detailed and current data reported via natural systems
- Data is validated in real-time via software
- Fully digitalised and automated 2 way exchange of data

Continue digitalising

- Increased right-time and event-based reporting
- Embedding verifiable identifiers into more ecosystems
- Integrate into payment ecosystems to enable payments in real-time through natural systems (e.g. via APIs)

Positioning the ATO to achieve our vision

The ATO today

Is recognised globally as a digitally mature organisation

Offers digital services delivering transformed and enhanced experiences for our clients

Is able to collect and exchange data in volumes and timeframes previously not imagined

Has more to do to digitalise and improve those areas not yet invested in

The ATO Digital Strategy drives the shift to digitalisation

Keep our existing suite of digital services and foundations strong

Make the right incremental improvements and additions to our services

Build in upfront integrity with ethical and secure services

Reimagine how our digital systems support client interactions

Establish robust digital governance to ensure alignment of organisational priorities and adherence to digital principles
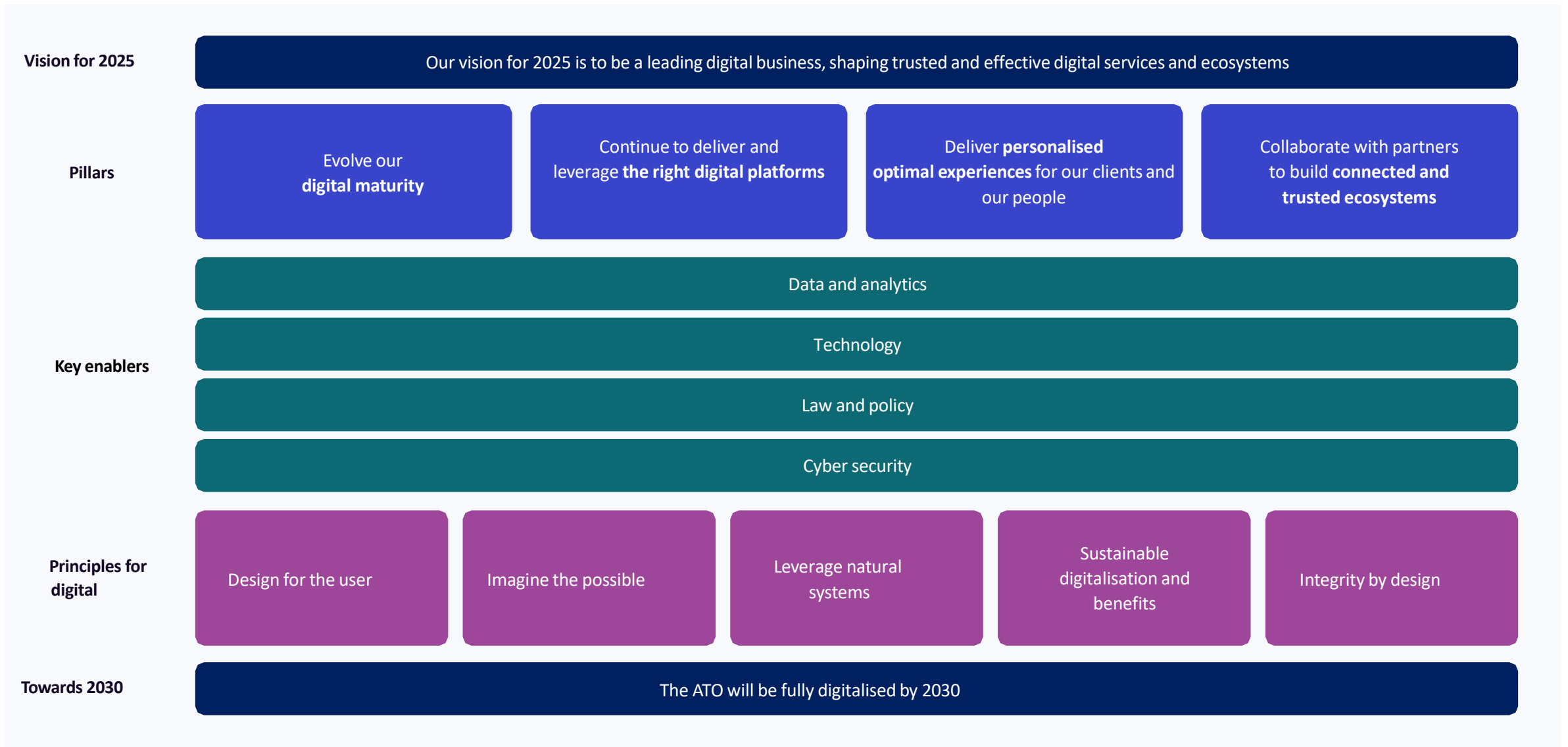
Leads to

Improved Tax Performance

Reduced cost to administer tax

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ATO Digital Strategy Framework

Vision for 2025	Our vision for 2025 is to be a leading digital business, shaping trusted and effective digital services and ecosystems

Pillars

Evolve our **digital maturity**	Continue to deliver and leverage **the right digital platforms**	Deliver **personalised optimal experiences** for our clients and our people	Collaborate with partners to build **connected and trusted ecosystems**

Key enablers

Data and analytics

Technology

Law and policy

Cyber security

Principles for digital

Design for the user	Imagine the possible	Leverage natural systems	Sustainable digitalisation and benefits	Integrity by design

Towards 2030

The ATO will be fully digitalised by 2030

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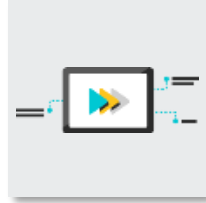
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Leveraging APIs & the ATO Digital Services Gateway

ATO Wholesale Platform Landscape

INTEGRATE WITH NATURAL SYSTEMS

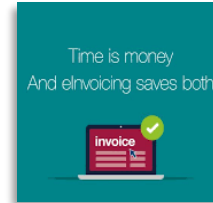*Future services/initiatives*
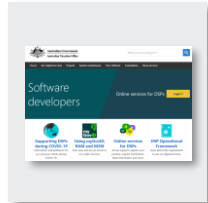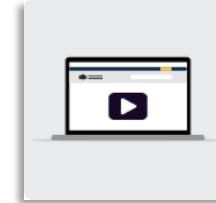
- Online Services for DSPs
- DSP & API Growth

Value Added Services

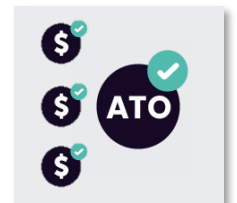Practitioner Lodgment Service

Single Touch Payroll

E-invoicing
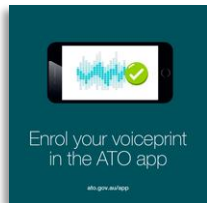
Digital Services Gateway
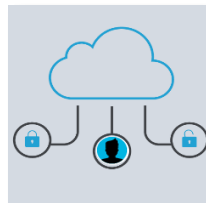
Working with Other Agencies

Auto Regulated Economy

IDENTITY AND INTEGRITY

Voice Biometrics
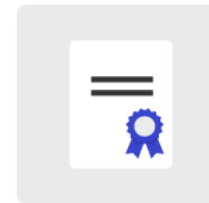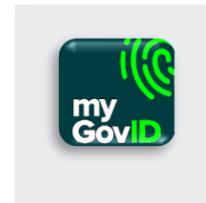
Cloud Authentication & Authorisation

Digital Service Providers (DSP) Operational Framework

myGovID app (IP2)

Relationship Authorisation Manager (RAM)

(IP3) Liveness & Facial Verification in myGovID app

Online TFN Application

Director ID

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Technology platforms enabling digitalisation in the ATO

We have 4 major data-exchange platforms:

Standard Business Reporting (SBR)

Platform:

- scalable and provides validation and transformation services.

Service Design:

- manages all existing forms based services as well as standards and formats (EBMS3/AS4 – XBRL, XML).

Digital Services Gateway (DSG)

Platform:

- quickly scalable and responsive.

Service Design:

- light-weight APIs that deliver interactive, real time 'chatty' digital services

- For example - business and life event transactions.

Bulk Data Exchange (BDE)

Platform:

- provides an efficient and stable capability to manage bulk and large transactions. No new technologies emerging.

Service Design:

- Limited access, trusted protocols - handles multiple formats eg: AIIR File – up to 12GB.

Enterprise Application Integration (EAI)

Platform:

- provides an efficient and stable capability to transfer messages to the processing end points. Enduring but diminishing.

Service Design:

- MQ based, trusted protocols - handles more than message transfers, e.g. transformation & error reporting.

DSG can enable our digital vision for 2030 & supports Tax Admin 3.0.

DSG is contemporary technology that is seamlessly scalable to meet future demand for API based services.

What the Digital Services Gateway enables

Outside-in-design	API First	Micro-Service Architecture Design
Services are designed around the needs of the end consumer enabling us to create a seamless experience	**APIs can be developed to provide a single and consistent experience across the various channels.**	**Allow quicker development, accelerate time-to-market, and easier to adapt to changes**

Outside-in-design

Old design approach:

• We take our data and expose it to our customers.

• Consumers must retrofit what is provided into the services they need.

New design approach:

✓ We develop around consumer use cases for the data rather than the structure of the data in our system.

✓ Generally designed using customer journey maps.

API First

Old design approach:

• API specifications are developed late in the design process.

• APIs are typically treated as an afterthought.

New design approach:

✓ APIs are fundamental and seen as distinct products.

✓ Design of an application starts with the API, before any code is written.

✓ Ideal for microservices architectures because it ensures application ecosystems start as modular and reusable systems.

Micro-Service Architecture Design

Old design approach:

• Development of single, large monolithic services which are predominantly forms based.

• Duplication of data across the various services.

New design approach:

✓ Each service is built to handle a specific feature within a system

✓ Microservice architectures enable applications to more easily scale, develop and maintain

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Designing around the customer

✓ **Understanding the natural system** ✓ **Design for real time reporting** ✗ **Periodic reporting** ✗ **Retrofitting APIs**

CUSTOMER ⟷ **APPS & EXPERIENCES** ⟷ **DIGITAL SERVICE PROVIDER** ⟷ **API PRODUCT** ⟷ **API TEAM** ⟷ **BACKEND**

Outside-in design	Inside-out design
designed around the customer	*designed around internal systems*
✓ **User centric design** that puts users and stakeholders at the centre	✗ **Reactive compliance** and end of the year clean required
✓ Apply **real world context** by studying the external environment and user problems	✗ **Fraud detection** rather than prevention
✓ **Influence legislation** with insights that align with business goals and TA3.0 vision	✗ Solutions do not meet stakeholder expectations
✓ Leverage **Global trends & disruptions** such as AI	✗ Increases risk of **over-engineering solutions**
	✗ **Costly rework** or **abandonment of APIs** not adopted

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Vision and evolution of ATO wholesale services

Future vision – How the DSG will change the way we deliver services

DSG is the API Management Platform for wholesale and retail APIs:

✓ DSG External Gateway enables **channel agnostic experiences** across all consuming systems.

✓ **Reduces** delivery **costs through reuse** of APIs between wholesale and retail channels.

ATO Online

Digital Services Gateway

Standard Business Reporting (SBR)

Bulk Data Exchange (BDE)

Online Services for Individuals

Online Services for BAS & Tax Agents

Online Services for Business

Wholesale Services

New Services

Existing Services

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Evolution of our wholesale service platforms

Implemented **2004**   **2010**   **2014**   **2021**

Forms Based Cyclical Engagement

eAS

- Wholesale Electronic Forms
- Cyclical Engagement

SBR

- Wholesale Forms
- Cyclical Engagement
- Multi-Agency Taxonomy

SBR2

- Wholesale Forms
- Cyclical Engagement
- Multi-Agency Taxonomy
- Industry Standards

DSG Evolution

- Quicker to Market
- Frequent Feedback loop
- Industry Standards
- Multi-Agency Taxonomy
- Service Specific Format
- Real Time Data Collection

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Shift in demand and usage of our wholesale service platforms

	Now	Next	Future

SBR1
Scheduled to be decommissioned

DSG
Enduring and expected to grow

A DSG First Approach will be used for new service builds

SBR2
Enduring and expected to decline (will be migrated to DSG)

EAI
Enduring and expected to decline (will be migrated to DSG)

BDE
Enduring and expected to remain constant (will support large bulk files)
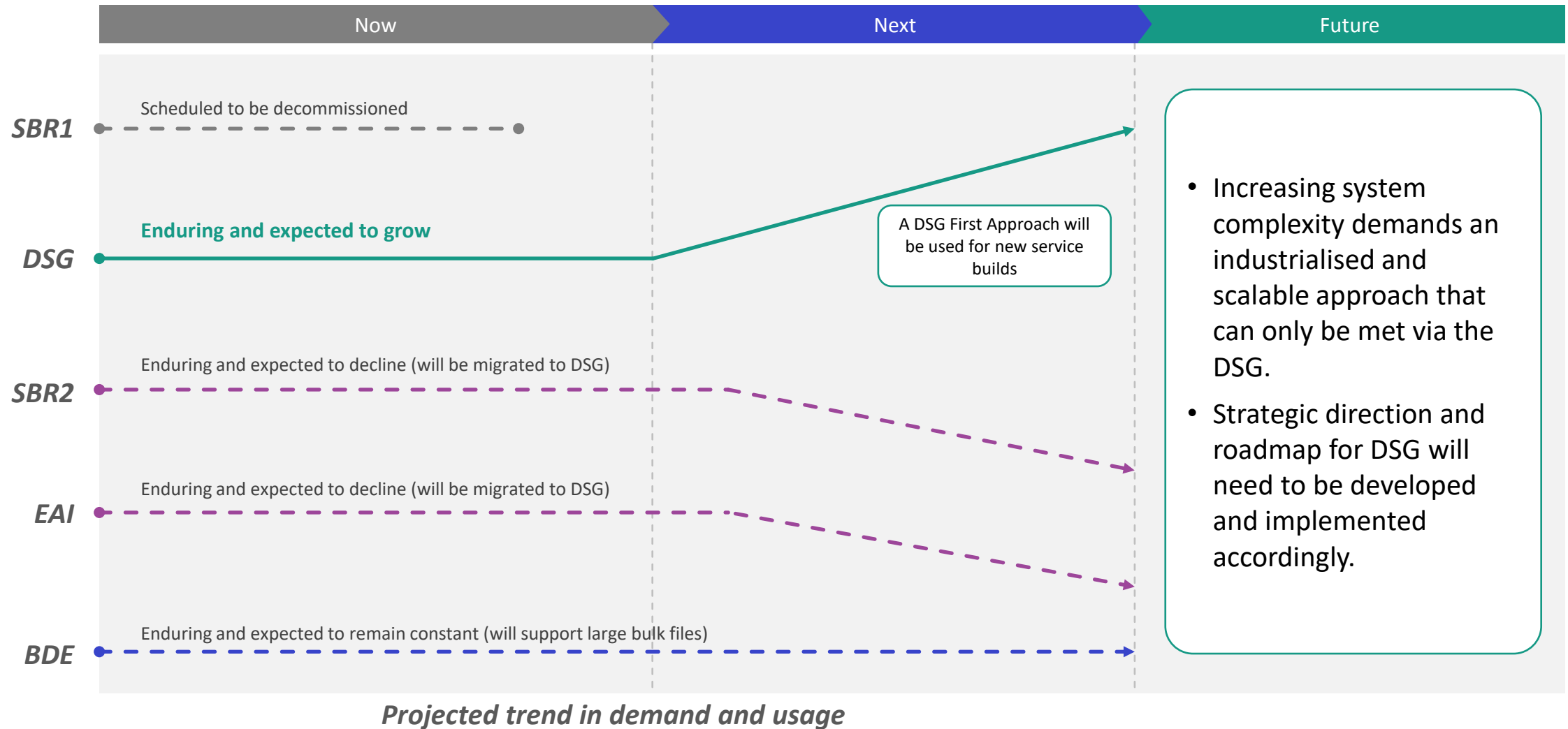
- Increasing system complexity demands an industrialised and scalable approach that can only be met via the DSG.
- Strategic direction and roadmap for DSG will need to be developed and implemented accordingly.

Projected trend in demand and usage

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Key dependencies – Collaborating with Business

Achieving our vision for DSG requires us to work with Business to adopt an "Outside-In" approach and look broadly across our ecosystem

Adapting our design approach

- **Break away from forms** based mindset

- Help business **rapidly ideate, prototype** and **validate** new "digitalised" services and offerings

- **Active collaboration** with the key ecosystem partners to validate concepts, elicit feedback and scale adoption

- Focus on **experience outcomes**

- **Actively engage** on new initiatives through Digital Partnership Office and existing DSPs

Drive Re-Use & Scale API Growth

- **Organic growth:** Leverage approved API strategy is approved for new platforms/service

- **Design for reuse:** Focus on the development of re-usable API's to achieve economies of scale.

- **API First Approach:** Consolidate development, operations and scale from Retail & Wholesale to API first.

- **Automate:** Invest in Automation and community tools to facilitate up-to-date information and knowledge-bases

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Key dependencies – Scaling our Capability

Achieving our vision for DSG requires us to accelerate the adoption of real-time data exchange strategically and cost effectively

Preparing for Real-Time Interactions

- Establishing a Holistic API strategy

- Developing a technology transition roadmap

- Optimising our operations for real-time processing

- Review and aligning relevant strategies to API strategy

- Develop tools and frameworks to support real-time demands

Reducing the burden to adopt APIs

- Culture change to adopt new design and architecture principles

- Accelerating the API catalogue

- Uplift internal teams' operational capability

Investing in the right design and solutions

- Establish appropriate governance mechanisms and processes

- Design for real time to keep pace and evolve with Natural Systems.

- Re-design existing systems to fit end state architectural patterns.

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Thank you