

# NSW Department of Education

## Schools Digital Strategy



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# Overview

The NSW Department of Education Schools' Digital Strategy ('the Strategy') describes how we intend to involve digital in preparing children and young people for rewarding lives as engaged citizens in a complex and dynamic society, and to be one of the best education systems in Australia and the world.

The future workforce requires people who have received the highest quality of education, whatever their location, background or ability and this is a fundamental goal for the NSW Department of Education.

The Strategy outlines the Department's digital directions and our specific priorities between 2019 and 2025. It lays out the digital investments that will address our requirement for lifting digital maturity within schools and our corporate functions, as well as improving our citizen-facing customer services.

This plan supports and directly contributes to our Strategic Plan 2018-2022 and is an enabler of the Business Plan and Accountability Framework.

Our vision is to be Australia's best education system and one of the world's finest, and to achieve that, it is essential that our schools, staff and students have equitable access to the highest quality teaching and learning resources.

Leveraging the potential of digital technologies plays a key role in doing this. They can deliver equity for our students and teachers, enhance the experience for all those that interact with the Department, improve student outcomes and improve the way we work.

Built together with schools, teachers and students, we are responding with a plan for an education system that maximises the impact of the use of digital in schools, and enhances support and equity for those providing that education – our teachers and staff in every school.

## Objectives of the Strategy

To partner with schools, teachers, parents & carers to ensure digital enables a teaching & learning experience where:

- Students have equity of access to resources so they receive the highest quality learning experience regardless of where they are or their personal situation;
- Teachers have the professional development and access to resources to apply digital where appropriate within the learning environment to improve student outcomes;
- Parents and others have excellent experiences in how they communicate, interact and transact with schools through a service channel of their choice.

## Strategy At A Glance

### Our Digital Pillars

Empower schools to shape their digital journey  
Enable schools to understand their digital maturity and plan then implement their new capabilities

Build our schools digital equity, experience and capability  
Strengthen our digital foundations and device access, and improve our digital resources, customer experience and data

Provide digital support to schools and our people  
Our service model will support digital teaching and learning to improve student outcomes and we will scale digital innovation

Track our outcomes  
Building an evidence base to measure efficacy and progress

### How does it support us?

How will this strategy support students?  
The strategy will improve digital education experiences and learning outcomes for all students.

How will this strategy support schools?  
Schools will have equity in the resources they need, tailored to the school, to support their learning environments, teachers and students

How will this strategy support teachers?  
Teachers will have the opportunity to learn new skills and to more easily integrate digital into their teaching and learning environment

How will this strategy support parents and guardians?  
Parents and guardians will have improved customer experiences in being able to use a channel of their choice to interact with schools

**Digital will deliver equitable opportunities for our students and teachers, enhance learning outcomes and improve the experience of all those that interact with the Department.**

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Section 1

# Executive Summary

*An education leader in a digital world.*

Our Vision is to be recognised as a leader in education through our delivery of integrated digital learning, teaching and school operations to maximise student outcomes

# Digital market forces and trends are important factors that will shape our future

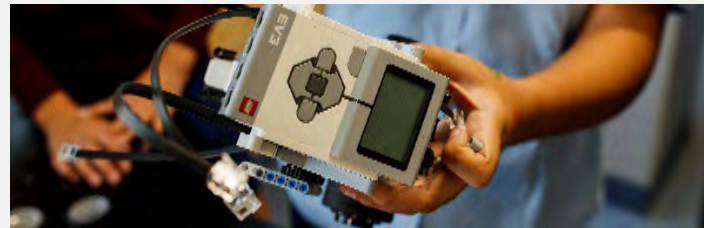
Progressive waves of digital change have created significant opportunities and disruption across all industries, geographies and market segments globally.

Each trend has brought its own benefits and challenges. Digital has caused the retirement of business models, products, services, skills and technologies, and the creation of new ones. These continual changes are the new normal.

Our workforce, and the students we teach, must be prepared to succeed and thrive in the society of today and tomorrow, and do so against a backdrop of continual change. We need to be highly attuned to digital trends in the market and quickly identify and act on those of benefit.

We require digital literacy skills in our people, and in our ways of working, to assist us to identify these trends and the opportunities they present.

We need greater organisational agility to do this quickly, effectively and at scale.



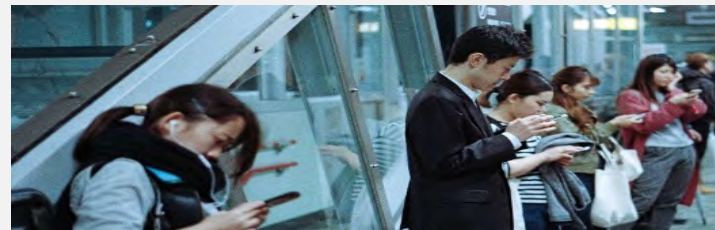
## Digital Has Changed Our Nation

It is less than ten years since the Social, Cloud, Mobile and Data digital wave was recognised – driving what is now close to ubiquitous device penetration and a digital-first culture. Technology such as robotic automation, artificial intelligence and IoT are forcing the next wave of digital change and creating new opportunities for students and teachers.



## New Opportunities Are Being Created

Opportunities across businesses and their workforces are being driven by digital technology. About 95% of Australian businesses in 2018 accessed the internet for core operations<sup>2</sup>, and the Australian workforce is forecast to require more than 100,000<sup>3</sup> digital professionals in the next five years across all industries.



## Major Workforce Impacts Are Emerging

Despite the pervasiveness of digital, 56%<sup>3</sup> of adults lack digital literacy skills. Large parts of the workforce – often the least skilled – are at risk of near-term automation. Different industries will be impacted by automation at different rates, leading to a complex picture of re-education and re-skilling. Educational institutions and enterprises are increasingly focusing on skills transition planning. We must ensure our students, including those from more disadvantaged backgrounds, are equipped with the knowledge and skills to succeed in this environment.



## Digital Is Not Just About Technology

Digital is enabled by technology, but its success is about much more. It involves taking on enterprise-wide change to evolve an business and operating models with the aim to augment and adapt the way people work and the skills they have. Digital enables the re-orientation of organisational focus to drive customer outcomes and introduce a new digital culture. Critical to this is integrating high volumes of data to predict, influence and respond to customer behaviour.

6 <sup>1</sup> - <https://www.abs.gov.au/ausstats/abs@.nsf/0/5A513D09038ADF47CA25739500185B21?Opendocument>  
<sup>2</sup> - <https://www.training.com.au/ed/your-guide-to-stem-the-careers-of-the-future/>  
<sup>3</sup> - <https://www.oecd.org/els/emp/Skills-for-a-Digital-World.pdf>

# The Schools' Digital Strategy is a core foundation of the future of education in NSW

The Department of Education has developed this digital strategy to better prepare its students and staff for the skills required today, and tomorrow, in our rapidly changing digital world.

In order to meet its vision objective of becoming "Australia's best education system and one of the finest in the world" we must better understand, invest into, and integrate digital across the Department.

The focus of this Schools' Digital Strategy is on 'those who teach' and 'those who support those who teach'. It concentrates on teaching & learning, and extends to student and school administration. It also includes some Corporate functions that support schools. It encompasses those critical participants essential to the student's learning journey, such as parents & carers, and the community.

The Schools' Digital Strategy is customer-centric. It has been developed with schools and for schools. Consistent with other agencies across NSW and in line with our strategic goals, we must increase our digital maturity and improve the digital experience we provide our stakeholders. To do so, we need a cultural shift towards greater agility, school-centric service delivery, and a planned progression of our digital maturity.



## Our Digital Vision

To be recognised as a leader in education through our delivery of integrated digitised learning, teaching and school operations that are customer-centric, digitally responsive, efficient, seamless, and that maximise student outcome while mitigating risk

### WHAT THIS MEANS FOR OUR SCHOOLS



#### Our students

Greater integration of digital learning improves the digital literacy of all students, better preparing them for future jobs. It supports collaboration and team-based problem solving - critical skills for future work.

Equity of access to quality learning resources is improved, with anywhere, anytime availability possible. Students can collaborate with peers in schools within NSW, Australia and globally.



#### Our teachers

Teachers are provided with the skills and professional development to support their digital literacy and within teaching. Administration and low-value tasks are automated and free up time to spend with students.

The learning environment has the digital tools needed to enhance the learning experience. Data from learning platforms is integrated providing a real-time view on student's learning performance to help prioritise teaching time.



#### Our leadership

School leaders are empowered to make the decisions on the digital direction that suits their school.

They have instant access to the insights required to manage their school, and through automation of school management, have more time to support their teachers and students.



#### Our support staff

Manual and low-value tasks are minimised as processes become automated.

Time is freed up to spend on higher-value activities - supporting leadership, teachers, students and parents.



#### Our parents & carers

Students benefit from improved equity, which in turn allows greater parent participation in their child's learning experience.

Personalised learning support enables greater parent & carer visibility of learning performance, and access to digital learning material facilitates more parent & carer support at home.

## Digital In Education

Digital in education comprises the skills, professional development, people, processes and digital platforms that, when combined and integrated effectively within the learning or school environment, enable a student, parent, staff, school or departmental outcome.

# Delivering the digital strategy will realise significant benefits for our teachers, staff, students and their parents and carers

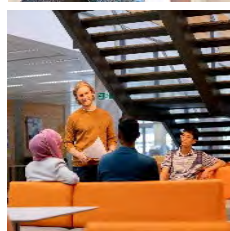
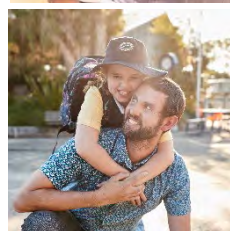
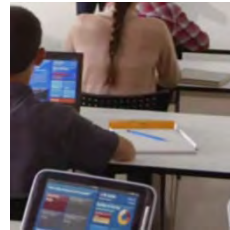
Evidenced in Australia and globally, improving digital maturity for schools can deliver significant benefits for students, teachers, leadership, support staff, and parents & carers.

Digital maturity moves in lock-step with equity. Through improved equity students can access the learning experience they need as guided by their teachers, who in turn, have access to the resources and professional development required to successfully integrate digital within teaching and learning.

These outcomes become more achievable when teachers and school staff spend less time on administration and manual activities and more time on supporting their students.

These outcomes likewise grow within the parent and carer experience, who, when enabled with high quality insights into their child's progression, can then direct efforts appropriately to support them in their journey.

Becoming a digitally mature organisation that effectively capitalises on its data, with a cross-Department approach to data integration, use and protection, is a key enabler of the strategy.



## Improving equity and access

Equity of access to digital for students and teachers involves moving to higher digital device ratios, augmenting the learning environment with connectivity and capacity, training and embedding digital learning techniques and enabling improved access to high quality teaching and learning resources. This combination of equity, PD and resource access allows those with different teaching and learning needs to apply these relevant learning resources effectively to achieve desired student outcomes.

## Data-driven student outcomes

Generating valuable insights from data can enable improved student outcomes through understanding of who needs support and when, allowing trend analysis of long term and inter-year / inter-school learning patterns, identifying interventions and leading to informed teacher decision making. Data analysis will also allow for network-wide oversight of digital adoption and effectiveness allowing time and investment to go to those that need it.

## Giving time back to teachers and staff

Augmenting the teaching experience with digital assistance, PD and training, improving the understanding of learning progression, and assisting teachers to design learning interventions personalised to the student's needs will allow teachers to spend less time planning and assessing, and more time teaching. Automation of administration, compliance and digitising some communications will reduce the time burden on teachers and staff.

## Improving the customer experience

Making digitally enabled transactions and communications easier and more effective will align our schools with contemporary community expectations of service in the digital age. This will improve the customer experience for all who interact with the school, including students, teachers, parent & carers, support staff and school leadership. This experience will be appropriately tailored for those with differing accessibility needs.

## Improving school and student management efficiency

Digitising inefficient administration processes and making decisions easier by providing platforms that 'just work' will enable school leadership and support staff to become effective business managers.



# Nine strategic focus areas are recommended to improve teaching & learning outcomes

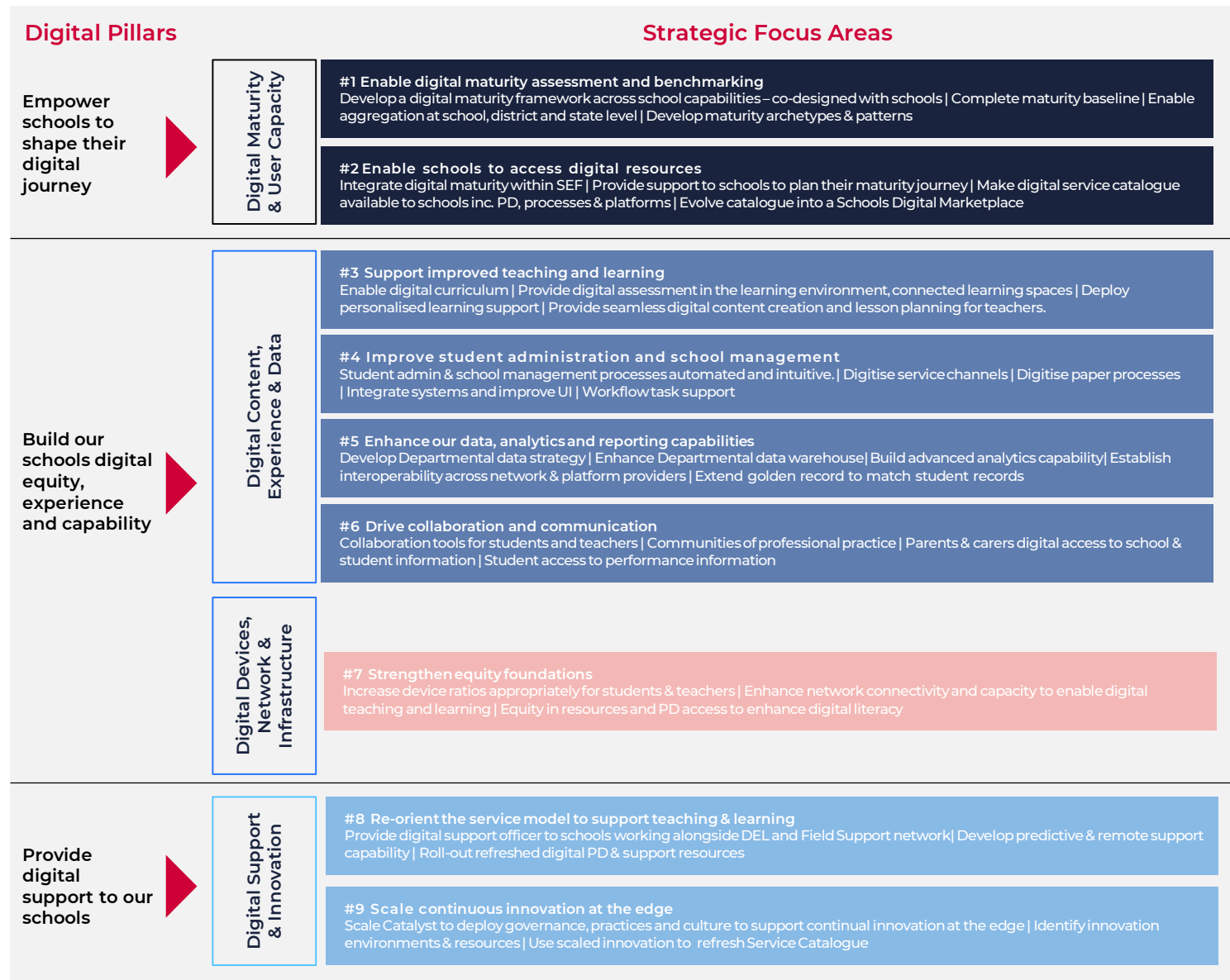
The journey to improve our digital maturity and deliver the necessary benefits starts by focusing on three pillars of effort:

1. empowering schools to shape their own digital journey
2. building equity then transformative digital capabilities and experiences, and
3. aligning the centre to better support schools to achieve their digital objectives.

To guide the investments across the digital pillars, four investment themes have been developed: Digital Maturity & User Capacity; Digital Content, Experience and Data; Digital Devices, Networks & Infrastructure; and Digital Support and Innovation.

Each theme is underpinned by a number of strategic focus areas that describe the activities, duration and estimated costs involved in achieving a target-state.

They represent investments to deliver the capability changes to improve digital maturity across the Department, and ultimately improve teaching and learning outcomes.



# The strategy will be delivered in partnership between schools and Corporate over three time horizons, starting with pilots

The Schools Digital Strategy starts with setting the right foundations for success.

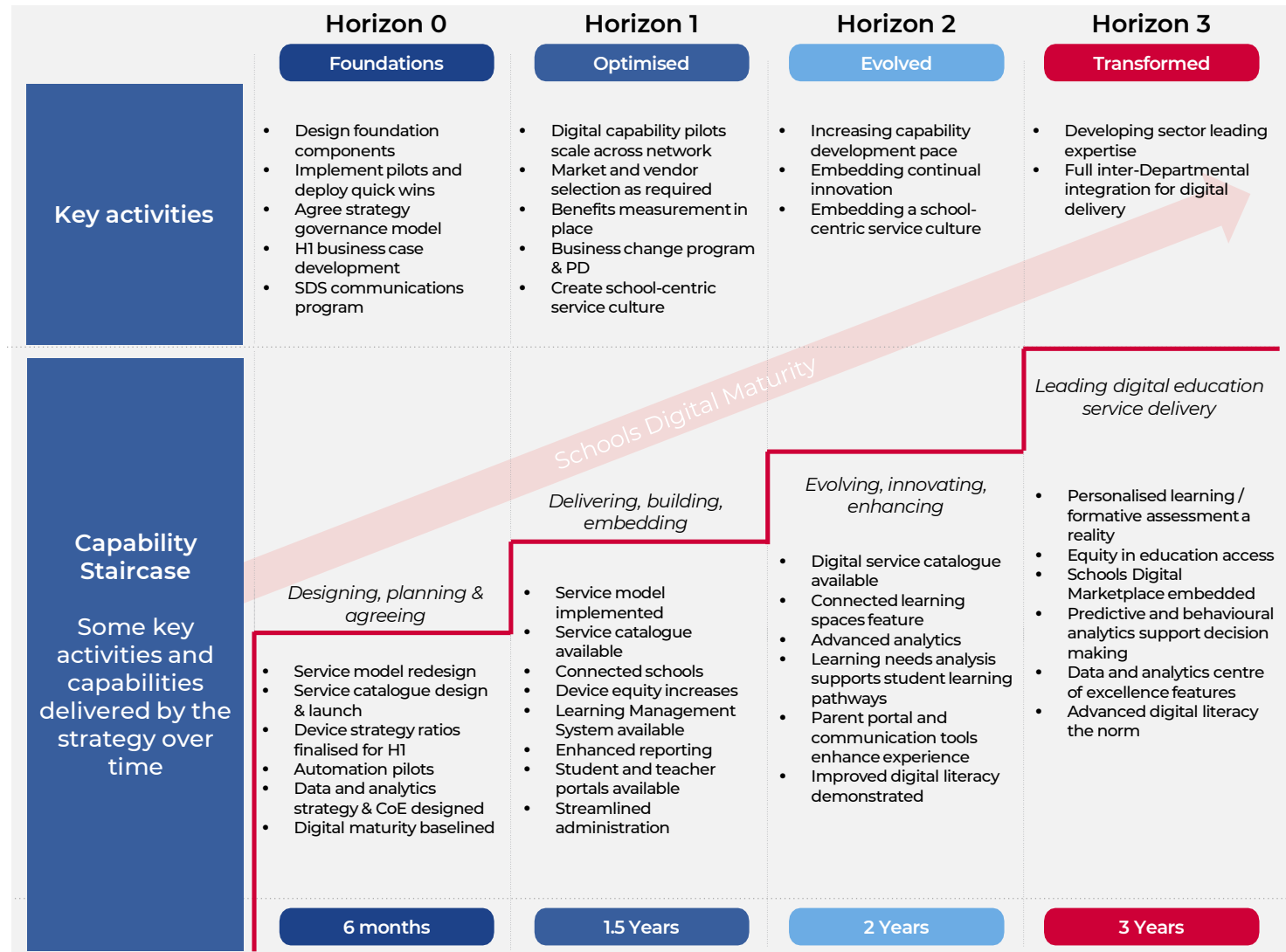
The 'horizon zero' timeline commences immediately via a pilot approach. This will concurrently build the digital maturity framework while scaling existing high quality assets. Remaining planning activities for Horizon 1 occur in parallel.

Those existing digital initiatives aligned with the strategic direction continue as planned, for example. HCM project, Digital Resource Hub and Connecting Metro Schools.

Governance of the Schools Digital Strategy is adjusted to become execution focused and enhanced to have permanent membership of the PPA and SPC.

SDS activities are monitored within a SDS Integration Office to ensure coordinated delivery.

Following endorsement of the SDS, these H0 activities begin immediately. Approval via Treasury of Gate 0 will be sought August 2019, and Gate 2 approval of Horizon 1 by end of 2019.



# Our strategic focus areas explained

## 1 Enable digital maturity assessment and benchmarking

This involves the development of a digital maturity assessment framework across school capabilities. The digital maturity framework will need to be repeatable and reliable, be easy to deploy and enable schools to self-assess, provide data aggregation at the school, district and state level, and facilitate benchmarking against peer schools. It will also capture the proportion of staff who are progressing their digital skills to support more uniform digital practice uptake.

## 2 Enable schools to access digital resources

The integration of digital maturity within the Schools Excellence Framework to assist school planning, and help schools to choose capabilities, deploy them and measure their success. Enabling schools to plan and deploy these new capabilities will require the development of a service catalogue and eventually a Digital Marketplace of high-quality integrated PD, platforms, processes and case studies to aim effective adoption.

## 3 Support improved teaching and learning

This includes the enablement of digital curriculum, digital assessment capabilities in and beyond the learning environment, the deployment of connected learning spaces with digital technologies, personalised learning support, and making digital content creation and lesson planning easier for teachers.

## 4 Improve student administration and school management

Student administration and school management processes are improved, including by automation of common transaction activities; AI and chatbot servicing of common service channels; digitisation of paper processes; greater integration of systems and improved user interfaces; and workflow support for tasks.

## 5 Enhance our data, analytics and reporting capabilities

An investment in improving our data and analytics capabilities, including through the development of advanced analytics, the evolution of CESE into a data and analytics centre of excellence, and integrated data within and beyond schools to aid comprehensive student data gathering. Advanced analytics underpin many components of the strategy, including personalised learning support, welfare support, and enhanced performance understanding.

## 6 Drive collaboration and communication

This area involves developing fit-for-purpose collaboration tools for students and teachers, creating communities of professional teaching practice, giving parents & carers online and mobile device access to relevant school and student information and communications, and giving students access to relevant school and subject information online from wherever they are in the state or beyond.

## 7 Strengthen equity foundations

This area involves increasing the device ratios for students of the appropriate age, and teachers, and ensuring the supporting network, connectivity and capacity is adequate to enable digital teaching and learning. It also involves moving to equity in digital literacy and increasing the confidence and skill sets across students and teachers.

## 8 Re-orient the service model to support teaching & learning

A re-oriented service model that provides greater people support to schools in order to more effectively deploy digital practices into the classroom. It embodies the principles of putting schools at the centre of service delivery and enabling them to succeed.

## 9 Scale continuous innovation at the edge

Ensuring the right governance, principles, practices and culture exists to support continual innovation at the edge. This area will support the identification and growth of innovation, capturing better practice and capabilities, test practices across the network and providing the ability to scale across the state.

Section 2

# Introduction

# The strategy was developed by listening to our schools, and listening to our business

The Schools' Digital Strategy has been developed by schools, and for schools.

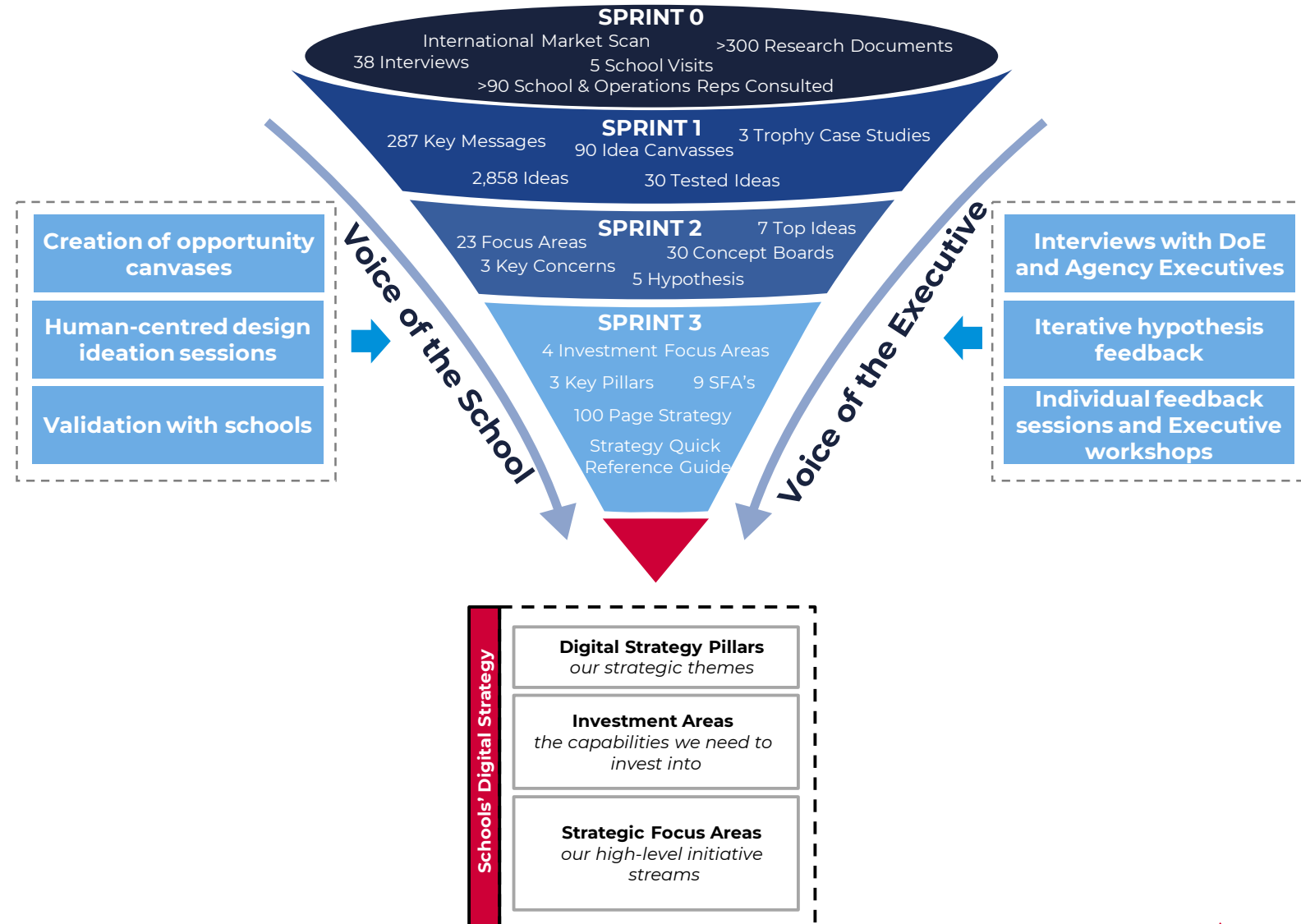
The strategy development process involved two distinct but related streams of work, through understanding:

- the voice of the schools through human-centred design consultation process; and
- hearing the voice of the Executive through interviews, stakeholder engagement and iterative strategy design and hypothesis testing.

Feedback from each stream was used to help shape conversations in the other, and to develop strategy hypotheses that were tested with the other group.

After iterations of testing, the strategy is the result of both of these streams.

The strategy builds on the Department's five Executive Priorities which are explained further on the next page.



# The strategy will build on our Executive Priorities and provide children the skills they need for tomorrow's jobs

The strategy is aligned to our five Executive Priorities.

The strategy identifies key investment areas and initiatives that will directly contribute to the Department's Executive Priorities. The Executive Priorities and the initiatives are described to the right. Further detail on the initiatives is contained later in this strategy.

Importantly, equitable access to quality teaching and learning resources, and greater integration of digital, will improve digital literacy skills and outcomes for our students.

Along with better collaboration support, we will be well placed to better equip our students with the skills they need for tomorrow's jobs.

This strategy will propel NSW Education forward in how it is supporting all children to better achieve their potential, regardless of their geographic or socioeconomic situations. It will assist make NSW an education leader in a digital world.

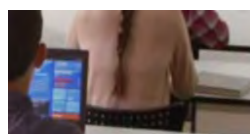


### Improve school and student performance

- More personalised and flexible learning and improved access to high quality learning resources improves learning outcomes
- Data insights and better decision making improves school & student performance
- Efficient processes gives time back to educators

### Strategic Focus Area Initiatives

- #3.1 Digital teaching and learning strategy
- #3.6 Digital teaching and learning methods
- #3.8 Personalised learning
- #4.2 Paperless processes
- #4.3 Automation tools
- #5.9 Advanced and predictive analytics



### Improve teaching quality

- Communities of professional practice support the teaching profession
- More available and targeted professional development
- Greater integration of different learning content improves variety of learning approaches and engagement of students

### Strategic Focus Area Initiatives

- #6.1 Collaboration and communities of practice
- #7.7 Digital literacy and professional development program
- #3.6 Digital teaching and learning methods

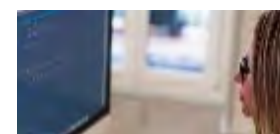


### Strengthen school leadership

- Greater evidence and data-backed decision making
- Improved school efficiency and administration processes frees time for leaders to coach, guide, mentor and lead

### Strategic Focus Area Initiatives

- #5.6 Data insights and recommendations
- #5.8 Enhanced operational dashboards
- #5.9 Advanced and predictive analytics
- #4.2 Paperless processes
- #4.3 Automation tools
- #4.8 Self-service tools



### Improve systems support to schools

- Changes to our service model provides greater support, right into the classroom
- Evidence base supports selection of high quality digital resources
- Greater support choosing and implementing the right solutions for schools
- Improved efficiency, self-service and automation

### Strategic Focus Area Initiatives

- #8.2 Re-oriented service model
- #8.4 Digital Liaison Officers
- #5.6 Data insights and recommendations
- #1.2 Digital maturity evaluation
- #2.5 Digital marketplace
- #4.3 Automation tools
- #4.8 Self-service tools



### Great place to work

- Modern technologies integrated into the teaching environment and administration block
- Support for innovation and collaboration
- Access to high quality teaching resources and tools from a trusted market

### Strategic Focus Area Initiatives

- #2.5 Digital marketplace
- #6.1 Collaboration and communities of practice
- #7.6 Laptops for Teachers
- #8.4 Digital Liaison Officers
- #9.2 Innovation support

# By 2025 NSW Education will be an education leader in a digital world

By 2025, our vision is to be a recognised leader in education through our delivery of integrated digital learning, teaching and school operations that are customer-centric, digitally responsive, efficient, seamless, and that maximise student outcomes while mitigating risk.

We will use digital to enhance the teaching and learning experience for students across the state, improving educational equity and access to high quality teaching.

We will use digital innovations to provide more customer-centric education services to all our stakeholders – students, teachers, parents and carers, support staff and leadership. Our investment in automation and self-service will free staff time from administration, compliance and non-teaching activities to give them time back to focus on our students.

Our end-to-end support will back schools' pursuit of excellence in the classroom.

To achieve our vision we will develop a future-ready mindset and embed human-centred approaches to our design, delivery and governance. We will grow our digital capabilities and our ability to innovate at scale, and build on our collaborative culture to better integrate corporate, schools, agencies and external partnerships.

## Departmental strategy

**Our Vision**

To be Australia's best education system and one of the finest in the world

**Our purpose**

To prepare young people for rewarding lives as engaged citizens in a complex and dynamic society

**Department direction (executive priorities)**

**1** *Improve school and student performance*

**2** *Improve teaching quality*

**3** *Strengthen school leadership*

**4** *Improve systems support to schools*

**5** *Great place to work*

## Digital vision

To be recognised as a leader in education through our support of integrated digitised learning, teaching and school operations that are customer-centric, digitally responsive, efficient, seamless, and that maximise opportunity while mitigating risk

## Digital strategy pillars

**Empower schools to shape their digital journey**

Schools are empowered to self-determine their digital journey. They own their digital aspirations and are supported in the evaluation, planning, delivery and measurement of outcomes of the digital investments that suit them and their context

**People & Culture**

 All staff and students have a digitally mature skill-set and mind-set

**Processes**

 Are automated and augment human decision-making

**Professional development**

 Access to the best digital solutions to develop high quality digital skills and career pathways

**Build our schools digital equity, experience and capability**

Each school increases its digital capability and maturity for each year and equity is maximised School management and student administration becomes seamless. Teacher admin time is minimised and each teacher attains high standards of digital literacy and pedagogy through professional development maximising student outcomes.

**Pedagogy**

 Fully integrated with digital enabling the increased breadth of teaching techniques

**Platforms**

 Are intuitive, co-designed with schools, self-heal and scalable

**Provide digital support to our schools**

The centre re-oriens to be school, teaching & learning centric. The support model integrates within the school and learning environment and enables innovation at the edge for the benefit of all

**Pre-Service**

 Digitally literate pre-service candidates thrive in the digital school environment

**Property**

 Fully digitally enabled learning spaces - physical and virtual

Section 3

# Current Situation



# We have more work to do to address equitable access to digital devices across schools

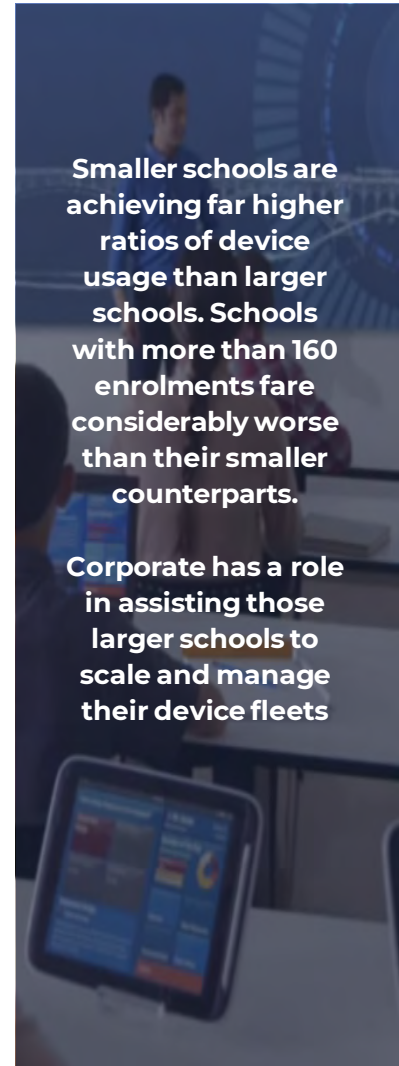
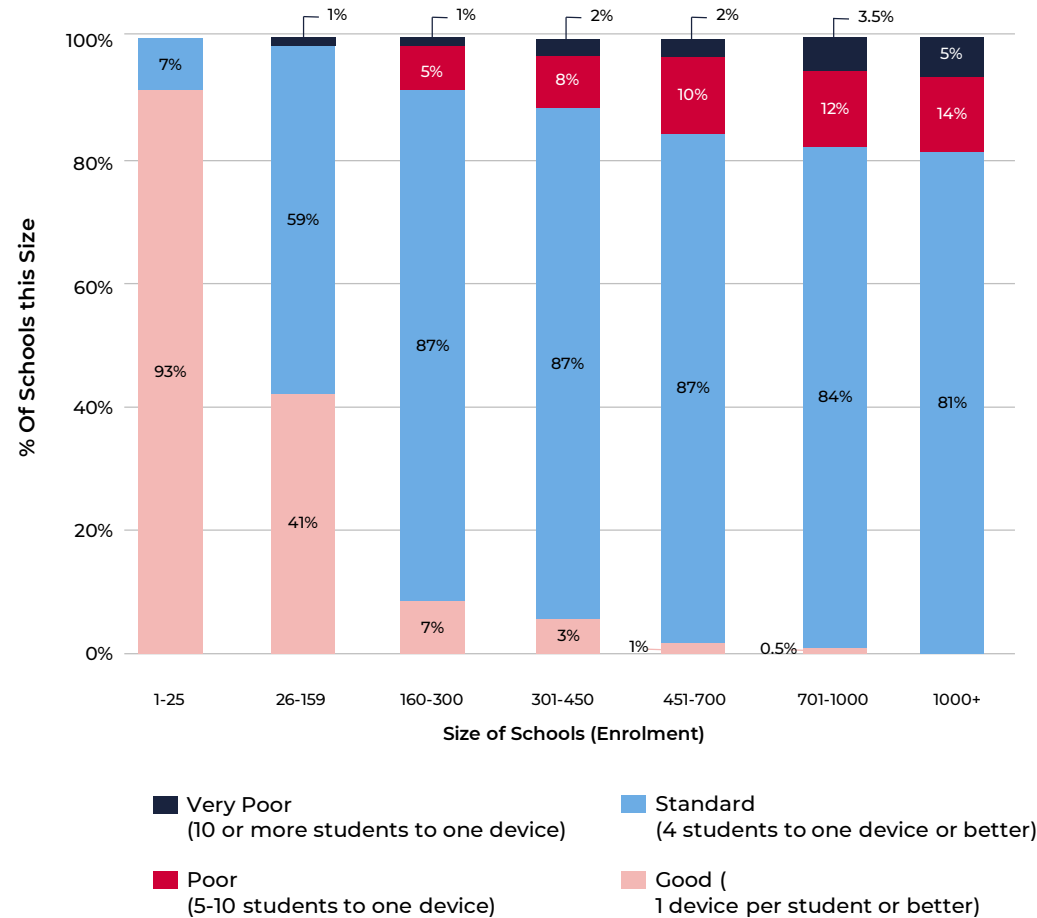
Our analysis shows the integration of digital teaching and learning results in positive changes in NAPLAN scores. We also know digital teaching and learning can improve the ability of some students to access learning in a way that better suits their needs. And we have an obligation to equip our students with the skills they need to thrive in future jobs.

However, we still have significant inequity in access to technology across the schools network. We have gained ground in our device ratios and have an average of 4:1 across the school network (figure 1), but device ratios are particularly low in disadvantaged areas and larger schools.

Teachers are gaining better access to digital and the skills to integrate it into learning spaces through the Technology for Learning (T4L) initiative. We have made improvements to network connectivity with the roll-out of the Connecting Country Schools program. Upgraded Wi-Fi has been delivered to 675 schools, with the Connecting Metro Schools program set to deliver to the remainder.

Wi-Fi provisioning in a number of learning spaces has established the foundations for integrated, adaptive and connected learning technologies.

Fig 1. Number of students per device – June 2019<sup>1</sup>



<sup>1</sup> – Device ratios analysis based on data provided by Department of Education ITD – June 2019, note that this data is based on known devices in the network and there is work in progress to introduce device discovery and monitoring capabilities for higher accuracy.

# Administration within our schools, teachers and principals is not digitally optimised

Our school staff are reporting an increase in their administration and compliance requirements (figure 2), while many of these processes have not yet been optimised for digital – or if a solution is available it is not being used. The result is time lost through administrative activities that could be spent on teaching and learning.

Principals report spending time more time on managerial tasks such as data collection, accommodation management, accreditation maintenance, registration processes and programming (figure 3). Student administration processes such as enrolment and consent management are typically manual. Many staff are using up to five systems to manage student wellbeing (figure 4).

Communications to parents & carers can be paper-based, creating challenges in reconciling consent and permissions. Students may be expected to courier information to parents & carers manually, typically at the bottom of a school bag.

We need to move to an environment where interactions are digitised and simple school processes and interactions are automated and streamlined.

Fig 2. Total % of staff reporting increases in workload<sup>1</sup>

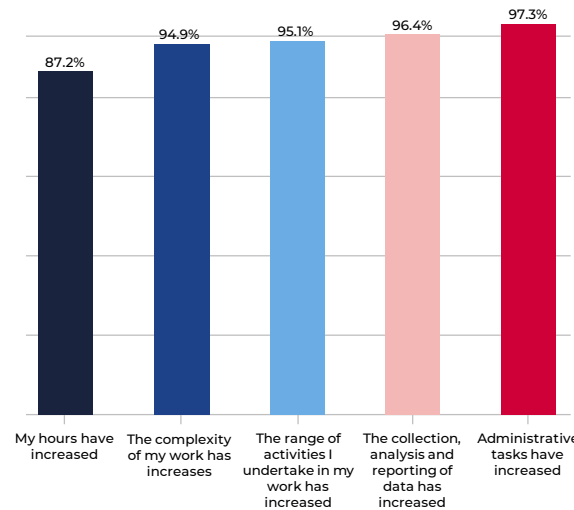


Fig 3. Principals time use on activities<sup>2</sup>

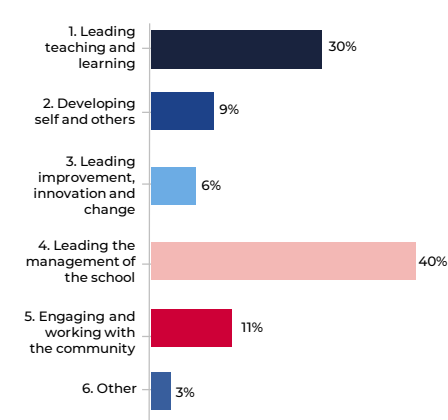
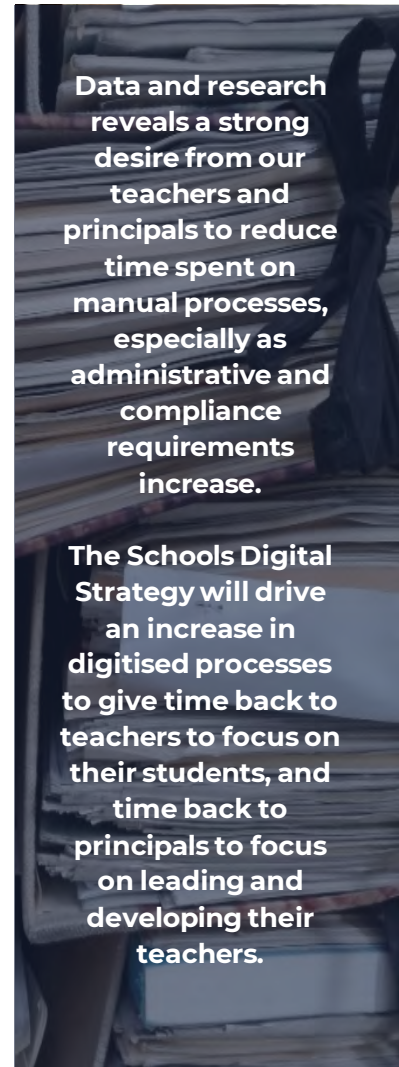
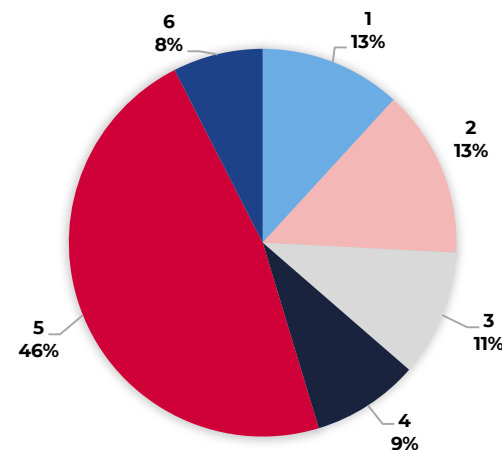


Fig 4. Delivery of wellbeing capabilities by systems<sup>3</sup>



# Our diverse technology landscape provides choice but increases support requirements

When a school's need for digital resources are not met by Corporate, schools often procure their own teaching and learning solutions.

While we do not want to introduce oversight that interrupts learning delivery to our students, we do need to improve our understanding of what constitutes the right resources for students to access and then support schools more effectively in their use.

The scale of digital and technology deployed and utilised across the school network is immense and increasing. In May 2019, over 360,000 devices accessed our network and over half of them were unsupported (figure 6). The risk is the slower speed and incompatibility of these devices is impeding the learning experience and generating higher numbers of support requests.

More than 1,000 education related web sites were accessed over 6,000,000 times in one quarter in 2017, however our understanding of the tools and resources accessed on these sites is limited.

This affects our ability to promote and support those tools with better outcomes, and provide more effective support in their adoption and utilisation.

Fig 5. May-July 2017 user count of URL<sup>1</sup> access by schools

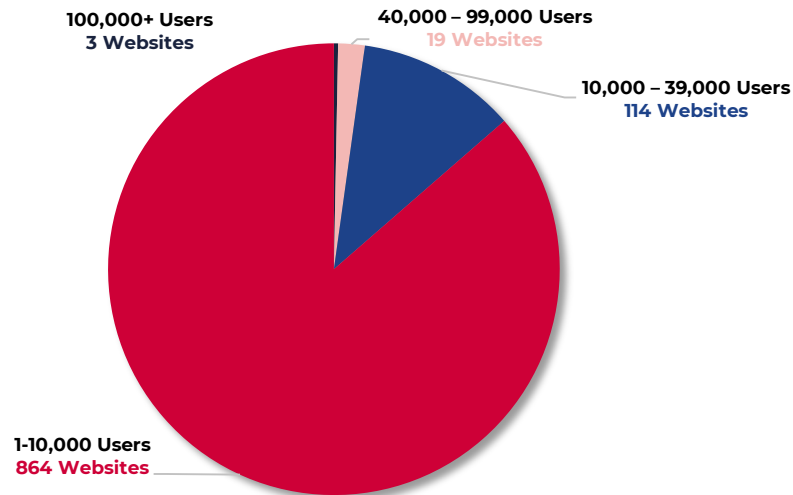
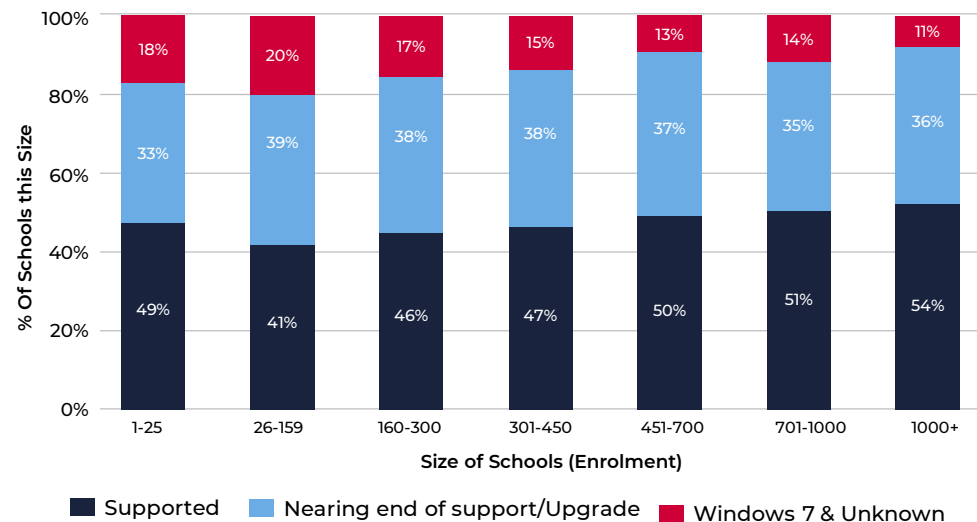


Fig 6. Proportion of Supported/Unsupported Devices – June 2019<sup>2</sup>



Section 4

# Strategic Context

# Digital market forces and trends are important factors that will shape our future

Progressive waves of digital advancement have created significant opportunities and disruption across all industries, geographies and market segments globally.

Each trend has brought its own benefits and challenges. Digital has caused the retirement of business models, products, services, skills and technologies, and the creation of new ones. These continual changes are the new normal.

Our workforce, and the students we teach, must be prepared to succeed and thrive in the society of today and tomorrow, and do so against a backdrop of continual change. We need to be highly attuned to digital trends in the market and quickly identify and act on those of strategic benefit.

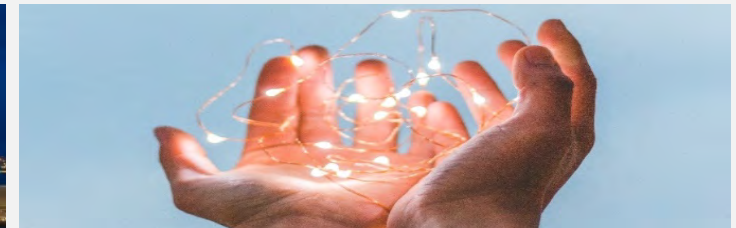
We require digital literacy skills in our people, and in our ways of working, to assist us to identify these trends and the opportunities they present. This means identifying new threats or opportunities, and then quickly evaluating our options and deciding on a course of action.

We need greater organisational agility to do this quickly, effectively and at scale.



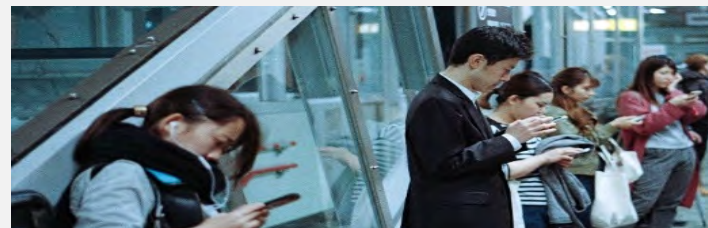
## Digital Has Changed Our Nation

It is less than ten years since the Social, Cloud, Mobile and Data digital wave was recognised – driving what is now close to ubiquitous device penetration and a digital-first culture. Technology such as robotic automation, artificial intelligence and IoT are forcing the next wave of digital change and creating new opportunities for students and teachers.



## New Opportunities Are Being Created

Opportunities across businesses and their workforces are being driven by digital technology. About 95% of Australian businesses in 2018 accessed the internet for core operations<sup>2</sup>, and the Australian workforce is forecast to require more than 100,000<sup>3</sup> digital professionals in the next five years across all industries.



## Major Workforce Impacts Are Emerging

Despite the pervasiveness of digital, 56%<sup>3</sup> of adults lack digital literacy skills. Large parts of the workforce – often the least skilled – are at risk of near-term automation. Different industries will be impacted by automation at different rates, leading to a complex picture of re-education and re-skilling. Educational institutions and enterprises are increasingly focusing on skills transition planning. We must ensure our students, including those from more disadvantaged backgrounds, are equipped with the knowledge and skills to succeed in this environment.



## Digital Is Not Just About Technology

Digital is enabled by technology, but its success is about much more. It involves taking on enterprise-wide change to evolve a business and operating models with the aim to augment and adapt the way people work and the skills they have. Digital enables the re-orientation of organisational focus to drive customer outcomes and introduce a new digital culture. Critical to this is integrating high volumes of data to predict, influence and respond to customer behaviour.

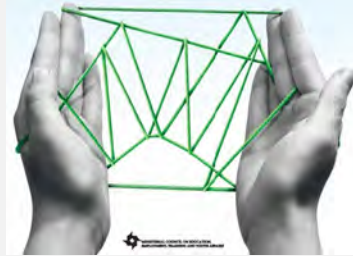
# In response to these forces, national and NSW Government reforms are setting a clear digital direction

The NSW State Infrastructure Strategy included a recommendation the Department of Education prepare a Schools Digital Strategy. Separately, the NSW Government, digital.nsw and the Department of Customer Service have directed all agencies to develop digital strategies. This next wave of digital reform is focused on front-line services including policing, health, and transport, and in education a clear focus on teaching and learning is expected. The NSW Government is committed to putting the ‘customer’ at the centre, and being digital on the outside as well as the inside.

The Schools Digital Strategy has the customer at its heart – teachers and principals having helped shaped its creation and will also be a central part of its implementation.

The strategy recognises that in order to achieve front-line change, key supporting functions, training, systems and personnel will also need to change. This will require a cultural shift in the Department. It is a part of what it means to be ‘digital on the inside’.

Ultimately, this strategy will support our teachers, staff, students and their parents & carers – collectively, our customers.



## The Melbourne Declaration Sets Future Goals

In 2008, the Melbourne Declaration stated that inequity and a lack of ICT skills and ICT in schools were affecting the quality and standing of Australian educational outcomes compared to our global peers. Ten years later the pressure has increased. The rate of digital change has increased and brought the skills gap into even sharper focus. Although the Melbourne Declaration is now under review, this digital strategy will position NSW well in the declaration renewal process .



## A Customer Service Department Has Formed

The newly formed Department of Customer Service has a mandate for customer-centric service transformation. The Department will work with NSW Government agencies to ensure customer perspectives are at the heart of policy and service design, funding, delivery, and measurement. It puts customers at the heart of decision making to ensure service delivery is fast, fair, accessible, safe, transparent and empathetic. The Department will also develop and supply whole-of-government digital solutions for agencies to adopt and implement across their customer service delivery systems.



## Digital.Nsw Are Guiding Agency Digitisation

digital.nsw has specified guidelines for agency digitisation that puts customer-centricity at the top of agency agendas. Government services need to be designed with customer input through-out, be intuitive, easy to understand and address the entire lifecycle of services. They need be digital “on the inside”, ensuring that front-line staff have access to all the resources and technology they need when they need it, that supporting processes are automated and that services are relevant and personalised.



## Service Nsw Is Shown As The Exemplar

Successful digitisation can be achieved without wholesale transformation. Service NSW has created a single view of customer and digitised many services, yet its back systems remain unchanged. Over a period of time its single view of customer and single portal for services has provided a template for others to follow in simple service redesign for citizens. These corporate and shared services reforms, now complete, were important initiatives to standardise on processes and platforms to support digital service delivery in the future.

# There is growing momentum to leverage digital to augment teaching and learning and impart essential skills

Like other education jurisdictions around the world, NSW is under pressure to change. There is growing recognition of the need to prepare students for their digital future and the jobs of tomorrow. The changing nature of work means digital literacy, critical thinking, creativity, complex problem solving skills, and interpersonal and collaborative skills will become even more highly valued. Organisations today already value these skills highly as interdisciplinary teams in disparate geographic locations collaborate to exploit opportunities or counter rapidly emerging threats.

For our part, we need to ensure the teaching and learning environment is adaptable, digitally enabled and has access to a range of high quality resources. We need to reduce the amount of time spent on administration and compliance tasks. Teachers and students need better tools to work collaboratively on problems. We require quality data so students, their parents and carers, and teachers, can track and participate more effectively in their learning. In order to effect this change we need to provide pathways for up-skilling digital literacy and skills required by staff, teachers and students.



## Gonski 2018<sup>1</sup> Recognises A Complex World

The 2018 Gonski Review recognises that school education must prepare students for a complex world that is rapidly changing.

Routine job roles will be increasingly automated, so school leavers will need different skill sets in a future workforce.

The 'industrial' model of education is no longer suitable as it does not allow for personalised teaching and learning, and digital technologies are now making that possible at scale.



## Oecd<sup>3</sup> Highlights Future Workforce Concerns

The OECD has reported on some significant opportunities and threats facing tomorrow's workforce. They found 40% of jobs created between 2005 and 2016 were in digitally intensive sectors, underlining the importance for the skill sets required for future workers. The OECD considers as much as 36% of Australian jobs face a significant risk of automation, emphasising the need for our education systems to be responsive in creating digitally literate graduates.



## Grattan 2017<sup>2</sup> Aims For An Adaptive Model

According to the Grattan Institute, teachers and students should be able to track their progress over time and use that to inform teaching and learning. There is an expectation teachers store and share their techniques to help train and educate other teachers. To prepare students for a changing world and to evolve practices in line with market trends, schools and systems need to innovate more systematically and rapidly.



## The Problem Statements To Be Addressed

We need to ensure curriculum, learning and pedagogical models can respond to these changing needs, with an adaptive, innovative and continuously improving education system that provides equitable access to digital resources. The Schools' Digital Strategy needs to provide a systems approach to address "technical debt" built up over decades and an opportunity to re-imagine new services and ways of working. An adaptive education system needs to balance local decision-making with top-down guidance and resource allocation based on needs and priorities.

# Understanding international education directions will be important for our success

Education systems around the globe are forging professional networks with one another.

These networks are enabling greater planning and evaluation of policy and operational responses in the way we have approached learning, teaching, and operations in the new digital age.

The global education message is clear and loud - digital forces call for an acceleration of student education, professional digital literacy skills, metacognition and agency.

As an education organisation, we will need to participate in national and international digital education dialogue and benchmarking, to develop a greater awareness of trends and opportunities.

We will also need to assess market signals and implement appropriate policy and operational responses that are sustainable, equitable and scalable.



## Going Digital

This year, the World Economic Forum (WEF) Going Digital Summit recommended, “Empower people with the skills needed to succeed in a digital economy and society. We will need to be ready for a market wide training challenge, fundamentally rethink education systems, foster foundational skills and life-long learning, address concerns around emerging forms of work, and improve social protection to ensure no one is left behind.”



## It Is More Than A Tool

WEF’s 8 Digital Skills All Children Need – and a Plan for Teaching Them states, the challenge for educators is to move beyond thinking of IT as a tool or “IT-enabled education platforms”. Instead, they need to think about how to nurture students’ ability and confidence to excel both online and offline in a world where digital media is ubiquitous.



## Skilling The Digital Native

This year, the OECD noted that “...despite the fact they are seen as ‘digital natives’, technology skills of students often are limited to basic communication and browsing skills”. OECD posed the question, “What can governments do to foster the redesign of curriculum that enhance the capacity of education and training systems to meet the skill needs of the digital age?”



## The Age Of Metacognition & Transferable Skills

CoSN’s 2019 Global symposium on Learning 2030 highlighted that there is a need to humanise education in the face of AI and automation technologies. We need to acknowledge what we tend not to focus on metacognition, core communication skills, logic, creative problem solving, communication and collaboration, and philosophy, and place further emphasis on the fostering of passion, wonder, student agency and curiosity.



# Digital is already part of contemporary learning and teaching and will be increasingly critical in the future

Digital continues to generate profound changes across societies and enterprises globally. In education, digital is increasingly being integrated into the way learning is delivered, driving new pedagogical approaches, and driving demand for new digital skills.

In addition, the consumerisation of IT has evolved a greater pressure on having those same experiences within education.

The societal desire to interact digitally, better understand an individual's history, and to interact with peers digitally is becoming table-stakes in the school environment.

We must ensure the digital choices we make can be integrated seamlessly into the learning environment so as to not disrupt or impact the delivery of teaching to our students.

Like good design, a successful digital solution will go unnoticed. Digital needs to be an enabler of a student or teaching outcome and not just a technology or tool.



## New Skills And Equity

Schools today are expected to develop the digital literacy of students, teachers, administrators and school leaders to successfully operate in our digital society. Parity or better with the broader population must be achieved across devices, connectivity, training and platforms or we risk developed skills being obsolete.



## New Learning Delivery Models

New learning delivery modalities are providing variety and interest and improving learning outcomes. Accessibility is being improved by technology. The proliferation of low-cost technologies like those available under the STEMShare Community program in NSW, are driving collaboration, creativity and problem solving in the classroom.



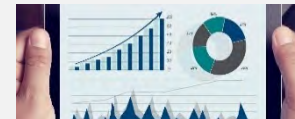
## Evolving Content And Channels

New learning content sources, different types of media and the proliferation of channels and platforms are causing a rapid evolution in the way educational content and courses are being delivered. Digital has enabled the massive-scale provision of high quality and industry-recognised qualifications to students.



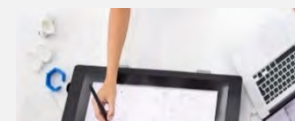
## Digital Interactions With Schools

As digital achieves near-ubiquitous levels of penetration, interacting and transacting digitally with schools is becoming the expectation as is manual process reduction. Digital can deliver greater visibility and involvement of parents and carers into their child's learning journey and activities.



## Digital Assessment And Measurement

The increasing use of digital assessment tools, coupled with advances in big data and analytics, are making the real-time understanding of a student's learning performance a reality. The improved visibility of student learning performance is allowing personalisation of learning delivery at scale.



## Agency, New Pedagogy And The Teacher

Digital is enabling learning to become more student-directed. It is creating opportunities for students to take greater responsibility for their learning direction with their teacher. As teachers increasingly integrate digital into their teaching and learning strategies, they are spending more time as learning mentors, digital producers and the orchestrators of physical and digital learning experiences.

# International case studies showcase the use of digital technologies to support education and public service delivery<sup>1</sup>







Several international digital education and public service delivery technology use cases have been observed and documented.

While some of these technologies have been deployed in NSW schools, they are typically isolated and may be relatively unknown amongst peer schools.

These case studies reflect :

- broad adoption of digital solutions across a school cluster or jurisdiction
- The achievement of learning, teacher and school outcomes relevant to the digital capability
- Broad adoption of digital change at a network level, e.g. the UK Government Digital Services department.

Each of these case studies have demonstrated that in order to achieve benefit through digital requires the integrated application of professional development, people and change management, process adjustment, digital platform adoption, and often an expectation and focus from the broader authorising environment to change.

 <p><b>Chadron State College</b></p> <p>The school integrated multiple ICT systems that were impacting teachers, pupils and staff onto a centralised information management system. The school created a new interface called “The Portal” which improved access, ensured data consistency and ease of access. The move saved staff from manual data entry and retrieval tasks and laid the grounds for a “cashless catering system” along with a school-wide biometrics system.</p>	 <p><b>Village Green Virtual</b></p> <p>Village Green Virtual Charter High School has a digitally-delivered flexible learning model credited with driving up graduation rates &amp; college admissions. In its first four years, VGV posted the highest gains of Rhode Island state’s high schools in the assessed content areas of ELA, math and science. The school has a 97% graduation rate and a 100% college acceptance rate.</p>	 <p><b>Park International</b></p> <p>Portugal’s Park International school uses learning gamification to raise student engagement achievement. Teachers have seen an increase in the level of motivation among the students and engagement in school activities and projects. Students report feeling more creative and have been observed taking a more positive approach in supporting one another.</p>
 <p><b>Monroe County Indiana</b></p> <p>A primary school cluster demonstrated agency at the edge, implementing a digital reading program based on an English ‘phonetic mark-up’. The cluster’s school principals collaborated, sharing data on reading outcomes through a regional hub; funded the initiative through regional sponsors and government equity funding provisions, provided professional learning to teachers in parallel with the rollout, and have since shared the outcomes with other districts.</p>	 <p><b>New Zealand e-asTTle</b></p> <p>e-asTTle is New Zealand’s national online learning assessment environment, set to ministry standards but utilised by schools at their discretion.</p> <p>It affords schools and teachers agency in its use, and provides contemporary understandings of assessment as learning, assessment for learning and the identification of natural classroom interventions based on real-time data.</p>	 <p><b>UK Government Digital Services</b></p> <p>UK Gov Digital Services has built a suite of services for the agencies it serves. A curated marketplace of digital services is supported by service standards and systems for delivery, an academy for training agency staff and a performance platform for measuring and publishing the benefits of service digitisation. This centralised enablement of digitisation, working together with agencies to choose, deploy and adopt services, has led to a large-scale change across the UK public sector.</p>

# In NSW, we are already using some leading assets which can act as a fast-start to accelerate digital teaching & learning

Across the department and our schools network we have many great examples of digital innovation.

In some areas we are recognised as leaders in the implementation of digital into the learning environment.

What we have done less effectively is to scale these innovations to deliver the same capabilities across all our schools more equitably. As a result, these innovations tend to stand out as isolated exemplars.

Delivering these capabilities more broadly will require greater support from the centre, a collation of these and other assets, the capture of associated PD, skills, change and other aspects on top of the platform, and a means for schools to decide which ones to adopt and tailor prior to implementation.



### Aurora College

Aurora College is a selective secondary school that offers science, English and maths classes virtually. Students connect through the virtual environment and attend lessons remotely in real time. They remain enrolled in their base school with Aurora classes timetabled in partnership. Aurora College provides opportunity and equity to gifted and talented students in regional and remote locations.



### Stemshare Community

STEMSHARE is a coordinated program of STEM technology kits (STEMShare Community kits), teacher training, curriculum linked learning challenges and an online community of practice.

It empowers schools to teach STEM lessons students in a practical and engaging way, and includes the necessary skills uplift of teachers.



### T4L Awards Program

The Technology 4 Learning Awards program recognises and celebrates leading and innovative practices in the use of technologies. Leading schools are celebrated for inspiring and leading change within their school community, and for participating in online and physical communities of practice. The program is effective at encouraging knowledge and expertise to be shared beyond the boundaries of the school.



### Interact-ed and T4L Powerups

ITD and their partners periodically present a technology roadshow in various centres across metropolitan and regional locations. These events support school-wide adoption of digital, and help to guide leaders, empower teachers and assist administrators in their technology adoption.

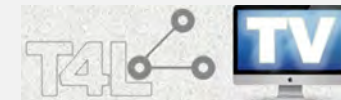
InteractED events are held in large regional centres including Dubbo and Wagga-Wagga as well as the Sydney metropolitan area, whilst T4L PowerUps reach small regional centres, going from Northern Rivers, to the Sapphire Coast and west from Dubbo.



### Catalyst Lab

The Catalyst Lab Innovation Program leads the identification, shaping and development of innovations and cutting edge reforms.

It aims to ensure NSW education schools and teachers and students have the knowledge skills and abilities to prosper in the 21st century.



### T4L TV

The T4L team presents regular multimedia video content to support schools with incorporating ICT in their teaching, learning and administration. They explore the latest stories, devices, trends, software, tools, people and opportunities all with a window into the classroom.

T4L TV is an effective communication medium to disseminate hints, tips and advice and interviews with key educational technologists; broadcasts from key education technology events; in-depth discussions with industry experts, and grassroots conversations with teachers.

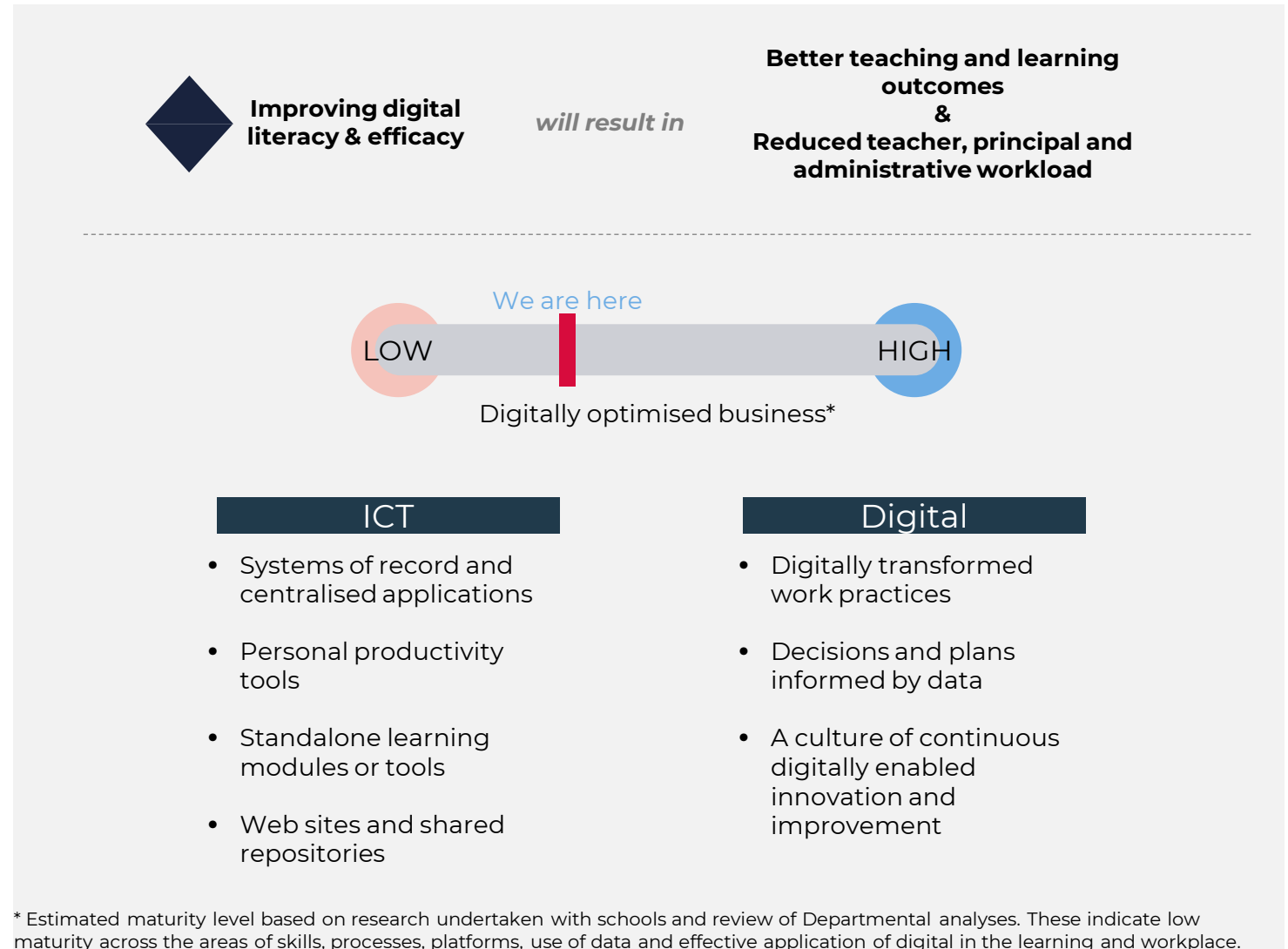
# Within this context, a shift in focus from upgrading ICT to adopting digital can truly transform the way we operate

Digital technology provides opportunities to automate routine tasks and improve personal productivity, giving teachers more time to teach and improving the experience of customers.

More effective use of data can improve decision making, and supplemented by advanced analytics and AI, which in turn can deliver personalised learning for students.

We have made a substantial and ongoing investment in ICT with a focus on traditional applications and uses. This has included systems of record and centralised applications, some personal productivity tools, standalone learning modules and shared repositories.

While these investments deliver value in their own right, there has not previously been an enterprise-wide and strategic focus on how current, new and emerging digital technologies can be used to transform teaching and learning, student administration, school management or digital core operations.



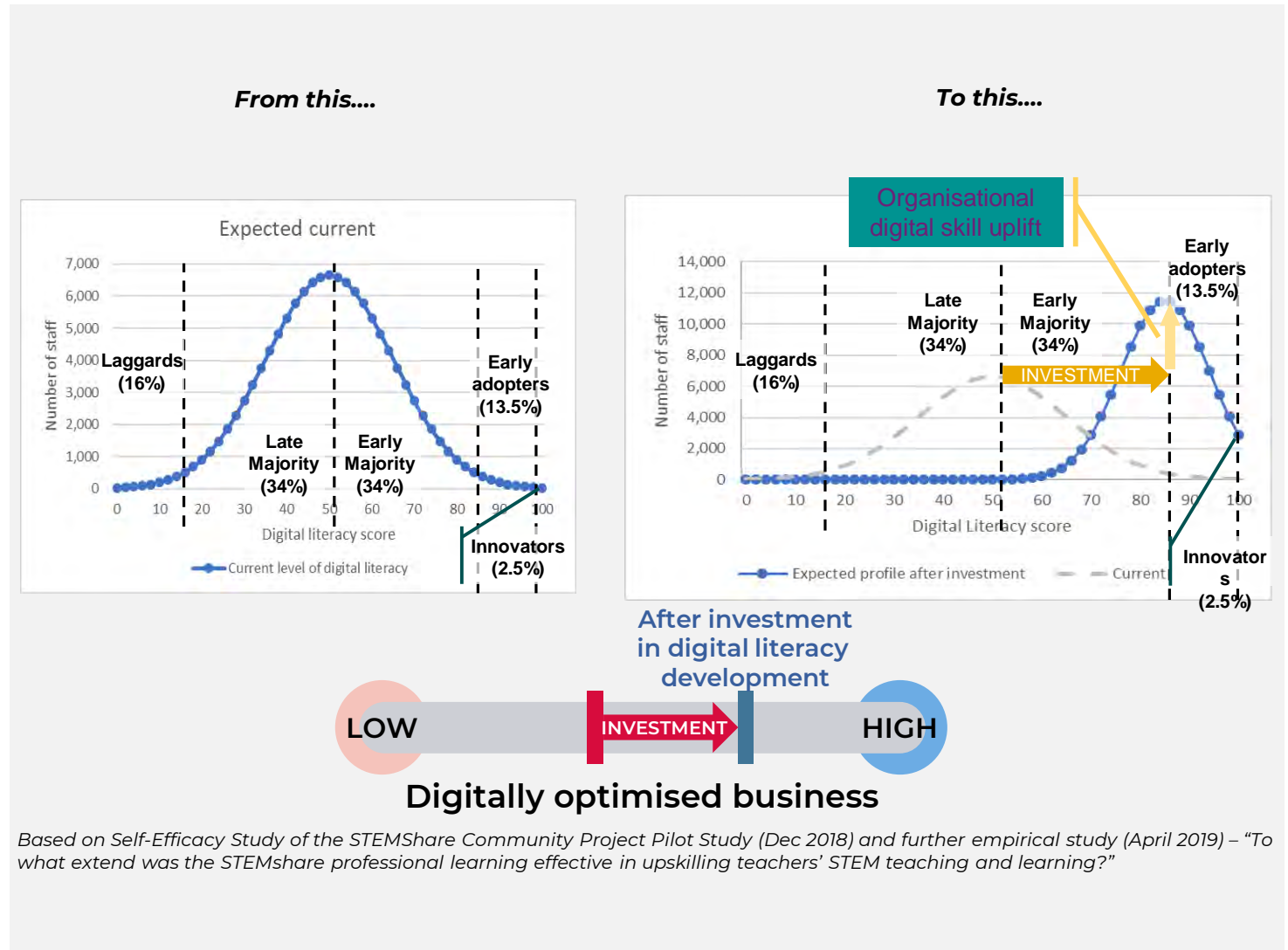
# This journey will lead to profound increases in digital literacy, efficacy and leadership for teaching and learning

While the current focus on ICT delivery within the Department has been on delivering applications and training, it has not addressed underlying digital literacy, efficacy and leadership across the organisation.

Levels of digital literacy within schools are largely based on the personal interests and predilections of school leadership and teaching staff. Advances in digital maturity often suffer when those digitally literate advocates leave schools.

Improving digital literacy across the board, in effect, shifting the curve to the right, will require a deliberate strategy, but is necessary to create a culture that is more capable of using current, new and emerging technologies. This will be necessary to support the greater integration of digital into our ways of working, and importantly to impart these skills to our students.

Greater digital literacy improves the capability to identify, trial and take advantage of digital tools to support the learning environment and reduce the administration workload.



Section 5

# Barriers and Problem Statement

# We must address a number of barriers to improve learning and teaching delivery

Technical, geographic and people differences across our vast network of schools in metropolitan, regional and remote locations has resulted in different levels of technology access and its integration into learning spaces.

The result is inequity in education delivery and learning outcomes for our students.

Schools are also using different technologies, and different processes, to manage key functions relating to school and student administration, many of which are manual and paper-based.

These process inefficiencies are taking time away from teachers and school staff that can be better spent on improving teaching quality and the learning environment.

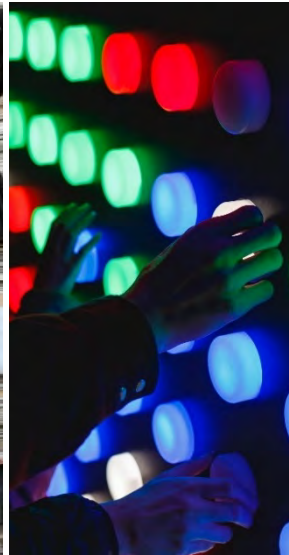
They are also impacting the customer experience, and in many of our administrative processes we are falling behind contemporary expectations of self-service and smart device access.

We need to ensure all our students have access to the same standard of teaching and learning, and to free up time for our people to support that aim.



## Manual school and student administration processes

Student administration and school management processes are often manual, requiring additional data entry and quality assurance tasks. School leadership need to spend less time on administration tasks, and more time developing and supporting teachers in the classroom.



## Fragmented customer experience

Parent and carers often navigate multiple channels to interact with the school. From completing paper-based forms, to manual fee payments, meetings or reports needed to understand their child's learning progress, the experience can be dislocated and inconsistent across channels.



## Administration requirements of teachers

Teachers report spending more time on compliance administrative tasks, thereby reducing the time available to plan, prepare and deliver quality teaching. In addition, many low value tasks are still manual, e.g. attendance, lesson planning or marking, again requiring more time vs teaching.



## Inconsistent access and equity

Some schools use very little technology to support teaching and learning, other schools have adopted digital curriculum delivery and assessment more fully. To ensure all students are adequately prepared and equipped for their future work, greater equity in digital resources is needed.



## Disparate data sources

The Department has vast quantities of data, but disparate data stores and difficulties achieving a 'golden record' of student information limits student tracking between schools. Analytics are not yet intuitive for the end user or built to provide personalised learning.

# We need to uplift and simplify areas of our technology environment<sup>1</sup> to meet our future demands

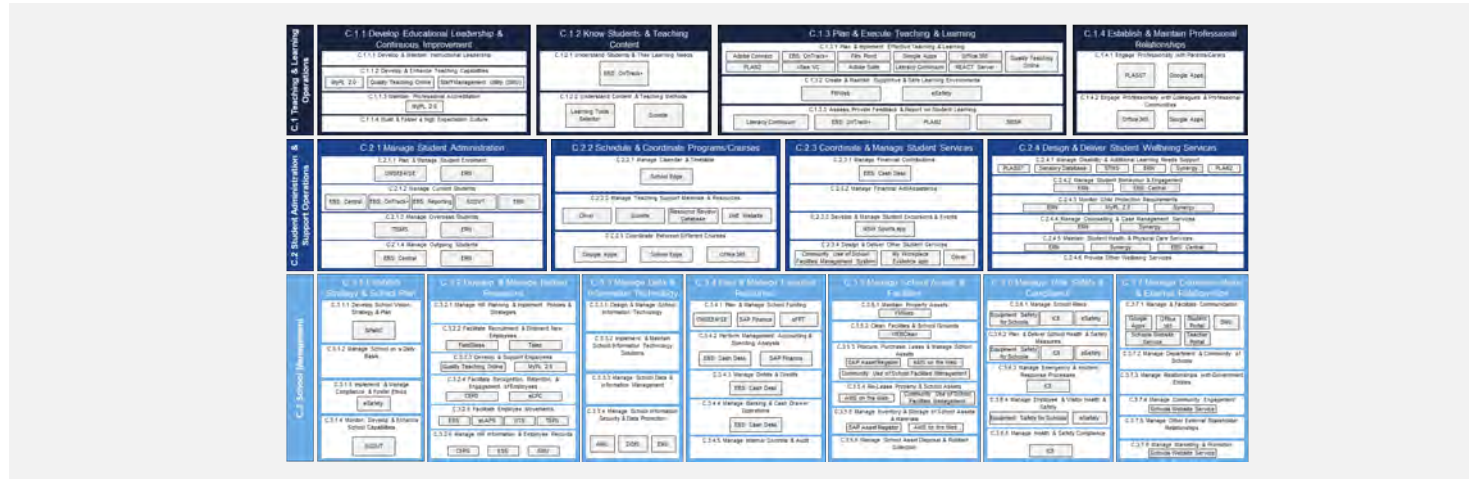
A preliminary assessment was recently undertaken against the existing technology environment and its ability to meet current and emerging requirements. The technology environment for primary schools was generally considered more favourable than secondary schools, since primary school business capabilities and activities were perceived as less complex to undertake and therefore required less technology support.

Notwithstanding the technology assessment was preliminary and requires further validation against both technical and functional fit, this strategy will undoubtedly place additional demands on existing technologies.

In some instances, those existing technologies may be suitable for extension but in many cases they will not be fit for purpose.

There are also a number of additional technical capabilities required to meet the demands of the strategy.

In both cases, future needs will require a gap-analysis against the platform, and transition plans put in place.



## Key Observations

### School Management

- Across school management technology the assessment has revealed a number of improvement needs
- A human capital management platform that reduces the burden on Principals and Teachers is underway and is intended to provide optimised process support across areas such as workforce planning, recruitment, talent management and onboarding.
- A review of the current enterprise resource planning platform is underway and will support future demands such as automation and predictive analytics
- Enhanced asset management capabilities will be required with the increase in equity. Current technologies allow for the static tracking and management of assets and not location based tracking that needs to be proactive, predictive and allow remote fixing
- Communication technology will be required to build a strong relation between the school and external parties (i.e. online portals)

### Teaching & Learning Operations

- Enhancements to the learning management solution to make ongoing professional development easier has been highlighted as a strategic requirement
- There is a desire to reach a personalised and adaptive learning capability. This requires a blend of capabilities across digital curriculum, rapid assessment tools, advanced analytics and recommendation technologies, and portals to deliver the content securely
- Flexible lesson planning, with the ability to quickly add digital curriculum content and assessment tools, is not well supported with existing technologies
- Technology at the 'edge', that is, in learning spaces, is not consistently implemented (e.g. WAPS)
- Collaboration platforms exist with varying usage and consistency across the schools
- Teachers will require access to more enhanced collaboration and content development tools to enable digital teaching delivery into the classroom

### Student Admin & Support Operations

- Student administration has been highlighted as an area requiring significant uplift of current technologies.
- Process automation, intelligent chat bots, student record management and digitised interactions with parents and carers are emerging as future demands
- The decentralised nature of student information causes record keeping issues when students transition between schools.
- A 'golden record' of student information is a requirement for the digital strategy
- Underlying technology platforms will be required to monitor, maintain and alert schools to student wellbeing issues

<sup>1</sup> The schools business capability model has been extracted from 01.01.02.08 Business Architecture v1.0 (SDS Data Room)



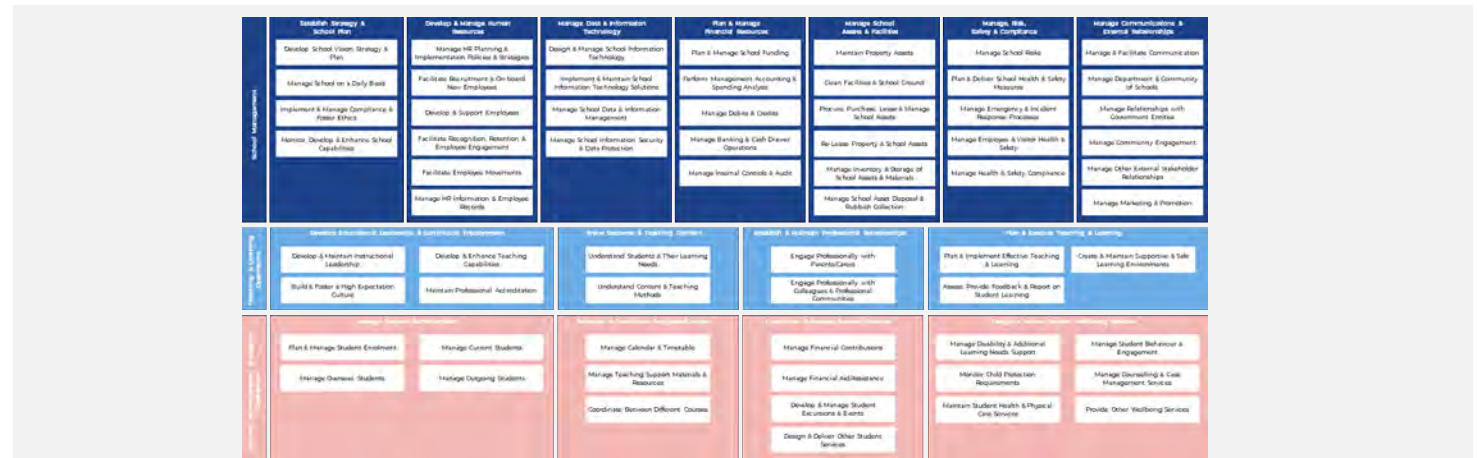
# There are a number of areas of capability<sup>1</sup> we need to uplift in order to meet our vision

Our Schools Business Capability Model provides a reference to understand the business capabilities required to provide school services.

Key stakeholders for schools such as students, school leaders, teachers, parents and the school administrative staff have highlighted pain points across their current school experience, as well as their expectations of the 'school of the future'.

These pain points represent opportunity areas within current school operations.

There is an opportunity to further develop the capability model with a particular focus on teaching and learning operations. This could provide a more granular reference model for those digitally-enabled business capabilities such as formative assessments, personalised learning, and developing learning content and lessons.



## Key Observations

### School Management

School Management includes capabilities focussing on defining, delivering, managing and supporting all back office logistics supporting school operations.

Key capability opportunity areas include:

- Improved structure of planning processes
- More effective and relevant staff skill development programs
- Improved co-ordination of data, systems and management
- Structured school asset management processes
- Standardised payment handling processes
- Reduced paper-based processes

### Teaching & Learning

Teaching and Learning includes activities directly related to delivering learning and teaching in the school, including developing and maintaining instructional leadership and professional accreditations

Key capability opportunity areas include:

- Improved access to digital learning resources for all teachers
- Consistent personalised learning experience, supported through insights into student learning experiences and progress
- Definition and examples of effective practice – current and emerging
- Increased options for teachers to collaborate with relevant stakeholders such as other teachers, schools, parents and carers

### Student Admin & Support

Student Administration and Support Operations focuses on those capabilities required to design, deliver and manage student services and day-to-day student support

Key capability opportunity areas include:

- Reduction of paper-based processes involved in enrolment, service provisioning, and day-to-day student administration
- Improved co-ordination and management of learning resources
- Efficiencies across repetitive admin tasks through automation and self-service options.
- Improvement in the structured management of student welfare
- Cyber safety and data protection measures

# There are key areas of change we need to address as we improve our digital enablement

Four key problem statements (opposite) need to be addressed to accelerate our digital enablement. By addressing these we can:

- Give schools the tools and information they need to understand their digital maturity and to plan their digital capability development journey
- Build our agency within schools in a more coordinated way and in line with agreed priority areas
- Implement a service model that supports schools more effectively, and that extends to teaching and learning in the classroom
- Address key areas of digital deficit that includes our pedagogical practices, processes, people skills, professional development, platforms and property

## We should empower schools to shape their own digital journey

Schools have varying levels of digital capability, they operate across a range of sizes and types and have student enrolments from a broad range of socioeconomic backgrounds. Schools are best placed to determine the rate and areas of digital capability and uplift they can successfully adopt. Schools as yet do not have the framework, tools or support they need in order to understand where their digital maturity currently sits, to help assess the areas they want to improve, and the means to better learn and adopt ideas from their peers.

Provide the means to assess digital maturity for a school and the network, support schools to plan a right-sized digital capability journey and continue that support for schools through to enablement within the learning environment.

## We need to invest in improving equity and resource access

We need to invest in a range of capabilities that will improve our digitally-enabled teaching and learning experience. However the effectiveness of this investment will not be realised if the focus of these investments – our school staff, teachers and students, are not able to access them- due to sub-optimal device ratio, a congested network that reduces productivity or an inability to access quality resources or gain real-time support when things go wrong.

Improve digital equity foundations and enable the way digital supports teaching and learning, student administration, and school management

## Our centre must support teaching and learning in the classroom

The centre needs to re-organise the way it engages with schools so it can better support them in enabling their digital ambitions. The centre has a pivotal role in assisting schools to navigate their digital options, and to provide more personalised support across process, people and technology from the leadership and support staff block right through to the classroom. Through efficient school management all staff will benefit from the time saved from compliance and admin, allowing more effort to be spent wherever it is needed.

Re-shape the centre's service delivery and support arrangements so we more effectively assist schools to integrate digital right to the classroom

## We need to address existing areas of digital 'debt'

We need to focus on digitising and automating manual processes; a number of our supporting technology platforms no longer meet our requirements; our staff and teachers are highly trained but there is a general need to improve digital literacy; we have inconsistent use of digital in our pedagogical practices; our properties are not consistently digitally enabled; and we need to demonstrate to pre-service staff - our next generation of teachers – that we have a modern working environment.

We need to remediate our digital deficit in order to provide the foundations, and remove the friction, that will otherwise prevent us from achieving our vision and outcomes.

Section 6

# Digital Vision & Strategy

# Our vision is to be an education leader in a digital world

Our priority in the delivery of the digital strategy is to balance the need for immediate outcomes with the longer term development of digital skills across the network.

We must deliver short-term improvements to alleviate pressures and give time back to teachers to invest in gaining the digital skills required for the future.

Through the delivery of new digital assets, embedded in teaching and learning practices, we will enable increased student outcomes, an uplift in customer experience, a radical reduction in manual and administrative teacher tasks and we will leverage our data to deliver personalised learning at scale.

To support this change, we will alter our Corporate service model to schools, supplying additional resources as they build the people, process and platform capabilities needed to drive transformative change and student outcomes.

## What could it mean to be an education leader in a digital world?

OECD reports New South Wales students utilising leading digital practices in their learning environments

Industry publications report on our leading digital maturity with improved student outcomes across PISA and NAPLAN

We have successfully closed the equity gap across our network

We attain 5 star ratings for experience across all of our public digital assets

Aboriginal student year 12 attainment rates are the same as non-indigenous year 12 attainment rates

All of our digital services exceed minimum accessibility standards

Teachers report significant reduction in time spent on admin and compliance

Our data is integrated, portable and used ethically to maximise student outcomes

People Matter reports high levels of staff engagement and job satisfaction

We enjoy lower service costs for digital and staff-assisted channels in comparison to other agencies

# We will move towards a digitised, school-centric model

The Schools Digital Strategy is aligned around a set of foundational digital pillars, investment themes and strategic focus areas depicted under the 'How will we get there?' row in the diagram at right.

The three digital pillars describes the strategic objective. The investment theme describes where we need to invest our resources, and the strategic focus area the outputs, or the 'how' we will go about achieving our objectives.

The strategy focuses on enabling schools and their leadership to choose the digital maturity objectives that make sense to them, and to have access to the support required to embed it in the school and the learning environment.

We will do this by increasing the range of digital capabilities available to all, and provide greater support from the centre to implement them. We will build on our foundations through new digital PD, better integrate digital within pedagogy, focus on skills capability development, implement automated processes, and digitally enable our properties. This will be coupled with an innovation framework to propagate the high quality work happening in schools and throughout the Department.



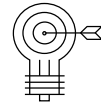
Why are we doing this?

Digital innovation is reshaping our world. The workforce of the future will require people who have received the highest quality education, regardless of location, background or ability. Digital technologies will play a key role in doing this. They can improve equity of access, enrich teaching and learning experiences, and enhance our capacity to collaborate across and between schools. They can help us build stronger partnerships with parents, carers and school communities and improve the way we operate.



Where do we want to go?

Our Vision is to be recognised as a leader in education through our delivery of integrated digital learning, teaching and school operations to maximise student outcomes

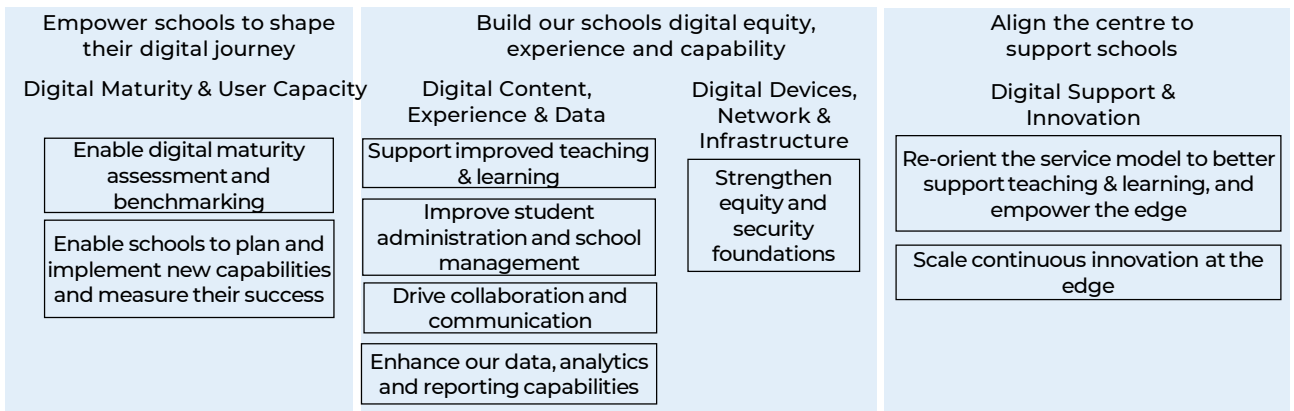


What do we want to achieve?

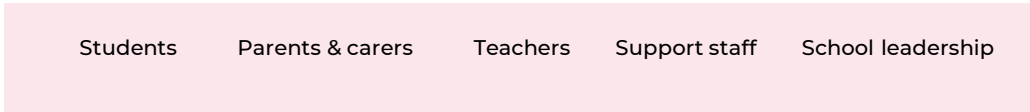
Equity for students & teachers	Improved customer experience	Data-driven student outcomes	Time back to teachers	School & student admin efficiency
Teachers and students have access to the digital resources they need, when they need them and infrastructure is no longer a constraint	All cohorts report high levels of customer experience, and can interact digitally with each other and the school to partner on their child's education journey	Data is integrated across the Department and supports a student's learning journey from K-12. It is used ethically and safeguarded	Teacher administration & compliance time is minimised. Teachers are supported by digital to automate time-sinks, and spend more time on students	Principals have all the data and skills needed to run their school effectively. Support staff spend their time on higher-value tasks as self-service and automation replace manual tasks



How will we get there?



Who will benefit?



# Being deliberate about digital capability uplift will help to focus our investments

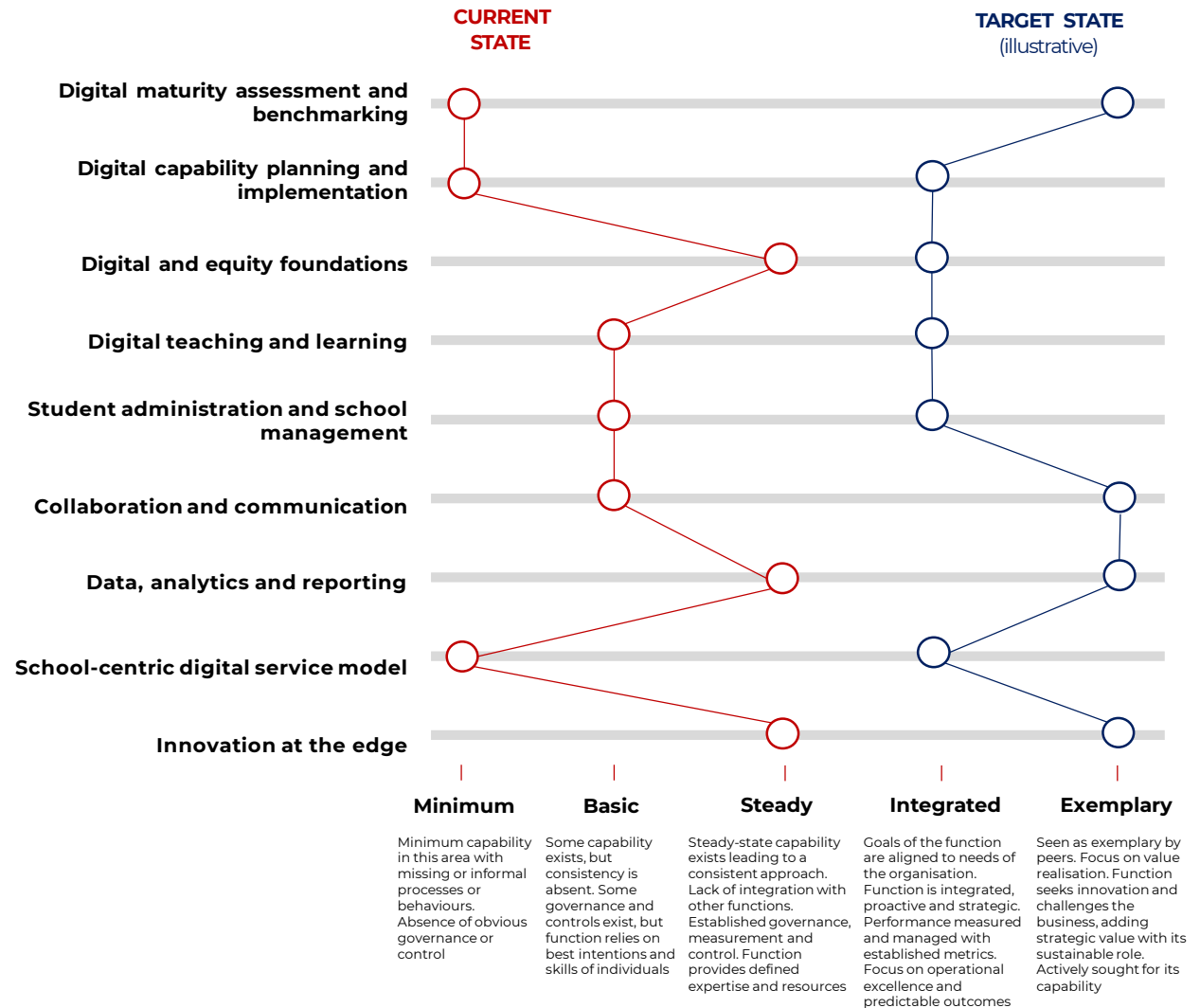
Currently there are highly varied levels of digital maturity across our schools. Some schools have embedded digital technologies to enhance teaching and learning while others are at earlier stages of the journey.

This depiction of current-state digital maturity represents an estimation of the overall maturity across our school and relevant central functions.

There is not yet a methodology to consistently measure it.

The maturity levels have been summarised from research undertaken and validated through the SDS' school consultation process. The maturity scale has been adopted from KPMG's education digital maturity assessment framework.

Across the network of schools there are exceptions at both ends of the digital maturity spectrum. Being deliberate about where we want to get to and the measures of success will ensure investment is focused where it is needed to ensure all schools benefit.



# Delivering the digital strategy will realise significant benefits for the Department

Improving our digital maturity has the potential to deliver significant benefits for students, teachers, leadership, support staff, and parents and carers.

By freeing teachers and school staff of time consuming manual or admin tasks, we can spend more time on creating engaging teaching and learning experiences to improve the learning outcomes of our students.

And making those engaging teaching and learning experiences more accessible to more students of all abilities reduces the current inequity in our system.

Improving our insights and analytics leveraging our vast data resources will provide robust evidence of the efficacy of our pedagogy, improving decision making and allowing us to better focus on programs that add value.

Digitising our common customer interactions will improve both our efficiency as well as the customer experience.



## Improving school and student management efficiency

Digitising inefficient administration processes and making decisions easier through platforms that provide insight rather than data and 'just work' will enable school leadership and support staff to become effective business managers



## Improving the customer experience

Moving transactions to digital and communications easier and more effective will align our schools with contemporary community expectations of service in the digital age which will improve the customer experience for all who interact with the school



## Giving time back to teachers and staff

Augmenting the teaching experience with digital assistance, PD and training, improving the understanding of learning progress, and assisting teachers to design learning interventions personalised to the student's needs will allow teachers to spend less time planning and assessing, and more time teaching and improving learning outcomes



## Improving equity and access

Moving to higher digital device ratios and enabling improved access to high quality teaching and learning resources to support learning outcomes will improve the equity of access to digital for all students, and allow those with different learning needs to access relevant learning resources more effectively



## Data-driven student outcomes

Generating valuable insights from data and analytics can enable improved student outcomes through understanding of who needs support and who needs extension, allowing trend analysis of long term and inter-year / inter-school learning patterns, identifying interventions and leading to informed teacher decision making

# Student safety, cybersecurity and data privacy risks will require special focus

The Department has significant responsibilities to ensure the safety and wellbeing of its students, teachers and staff in both its physical and virtual environments. It must afford particular care and protection to children.

Greater access to devices, the Internet and social and collaboration tools will require measures to reduce the risk of harms to children, including through cyberbullying, access to inappropriate content or inappropriate contact from others.

An increase in the number of digital devices accessing the network, and greater integration of digital teaching and learning tools and collaboration tools will necessitate a broadening of existing cybersecurity measures.

The acquisition of more data, and potential to leverage advanced analytics and artificial intelligence to support learning outcomes will also require careful considerations around the ethical use of personal data, where and how that data is handled, and the rights individuals have over its retention, use and deletion.

Each of these areas will require additional focus over time.



## Student safety online

The Department has a duty of care to ensure students can use and enjoy its physical and virtual environments safely, creatively and without fear.

The provision of digital resources and tools, and access to networks, has the potential to expose students and staff to online bullying or harassment and other harms

Online child grooming attempts are a pernicious threat that requires extra vigilance and controls around social media and communication tools, and clear policies, reporting channels and training on usage, as well as vetting and controls on applications.



## Cybersecurity

The prevalence of bad actors in the cyber domain is well established. Phishing and scam attempts are commonplace, as are attempts to infect systems with malware and ransomware for criminal purposes.

The threat of sophisticated bad actors intent on infiltrating networks and collecting personal data is real. These actors are increasingly targeting 'softer' network environments through both penetrative and socially engineered attacks, and education systems and children are particularly vulnerable.

These threats require extra vigilance and advanced and adaptive cybersecurity capabilities to effectively counter.



## Data privacy

The digital rights of students and the ethical uses of data must be at the forefront of our response to the technological advancements we introduce into our schools.

The Department has a responsibility to ensure the appropriate use and protection of the personal data entrusted to it. Advanced analytics and personalised learning will require the use of individual student learning data. This data is likely to require analysis at the edge and in the cloud, and will require strong safeguards to ensure student data is kept safe, and only used for appropriate purposes.

## Information security, data privacy and online safety

It will be important to ensure existing operational responses to information security, data privacy and online safety remain aligned to the strategy and the emerging digital landscape. As the digital footprint expands, it will be necessary for the Department to ensure there is clear accountability and responsibility to:

- Evolve and champion a cybersecurity and data privacy program and culture, that is balanced in its ability to protect and enable the enterprise, its data and people, while maintaining vigilance as risks evolve and new threats emerge
- Sustain organisational commitment to cybersecurity and cyber-safety program objectives, including appropriate and adequate funding, staff, training, policies, ethical considerations, technology solutions, and service partners to maintain readiness
- Establish and manage the appropriate staffing mix of internal and external resources to provide the skills and services required for effective management and delivery
- Partner with the business to ensure strong communication, education and participation in risk mitigation measures.



# Nine strategic focus areas are recommended to deliver teaching & learning outcomes

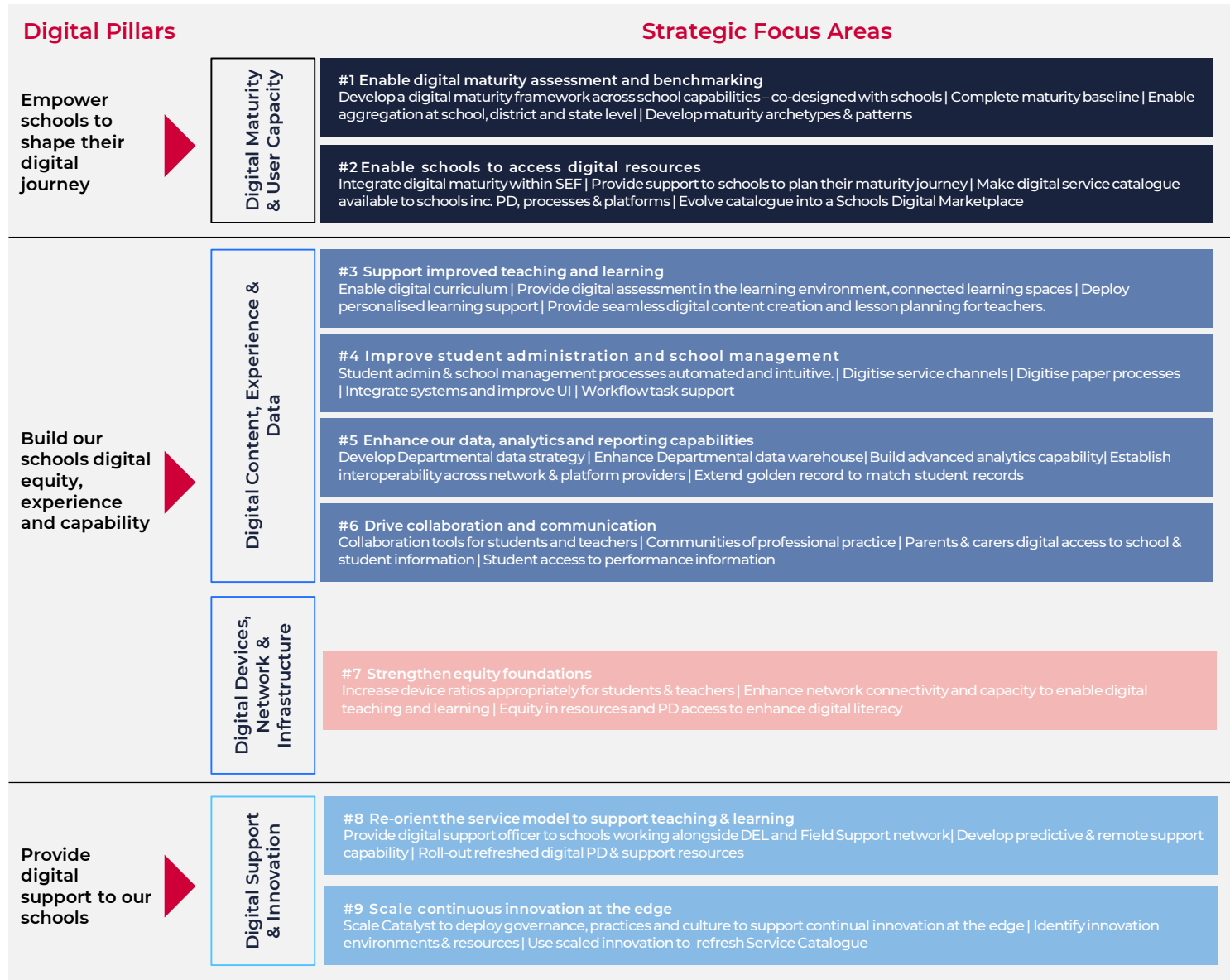
The journey to improve our digital maturity and deliver the necessary benefits starts by focusing on three pillars of effort:

1. empowering schools to shape their own digital journey
2. building fundamental then transformative digital capabilities, and
3. aligning the centre to better support schools to achieve their digital objectives.

To guide the investments across the digital pillars, four investment themes have been developed: Digital Maturity & User Capacity; Digital Content, Experience and Data; Digital Devices, Networks & Infrastructure; and Digital Support and Innovation.

Each theme is underpinned by a number of strategic focus areas that describe the activities, duration and estimated costs involved in achieving a target-state.

They represent investments to deliver the capability changes to improve digital maturity across the Department.



# Our strategic focus areas explained

## 1 Enable digital maturity assessment and benchmarking

This involves the development of a digital maturity assessment framework across school capabilities. The digital maturity framework will need to be repeatable and reliable, be easy to deploy and enable schools to self-assess, provide data aggregation at the school, district and state level, and facilitate benchmarking against peer schools. It will also capture the proportion of staff who are progressing their digital skills to support more uniform digital practice uptake.

## 2 Enable schools to access digital resources

The integration of digital maturity within the Schools Excellence Framework to assist school planning, and help schools to choose capabilities, deploy them and measure their success. Enabling schools to plan and deploy these new capabilities will require the development of a service catalogue and eventually a Digital Marketplace of high-quality integrated PD, platforms, processes and case studies to aim effective adoption.

## 3 Support improved teaching and learning

This includes the enablement of digital curriculum, digital assessment capabilities in and beyond the learning environment, the deployment of connected learning spaces with digital technologies, personalised learning support, and making digital content creation and lesson planning easier for teachers.

## 4 Improve student administration and school management

Student administration and school management processes are improved, including by automation of common transaction activities; AI and chatbot servicing of common service channels; digitisation of paper processes; greater integration of systems and improved user interfaces; and workflow support for tasks.

## 5 Enhance our data, analytics and reporting capabilities

An investment in improving our data and analytics capabilities, including through the development of advanced analytics, the evolution of CESE into a data and analytics centre of excellence, and integrated data within and beyond schools to aid comprehensive student data gathering. Advanced analytics underpin many components of the strategy, including personalised learning support, welfare support, and enhanced performance understanding.

## 6 Drive collaboration and communication

This area involves developing fit-for-purpose collaboration tools for students and teachers, creating communities of professional teaching practice, giving parents & carers online and mobile device access to relevant school and student information and communications, and giving students access to relevant school and subject information online from wherever they are in the state or beyond.

## 7 Strengthen equity foundations

This area involves increasing the device ratios for students of the appropriate age, and teachers, and ensuring the supporting network, connectivity and capacity is adequate to enable digital teaching and learning. It also involves moving to equity in digital literacy and increasing the confidence and skill sets across students and teachers.

## 8 Re-orient the service model to support teaching & learning

A re-oriented service model that provides greater people support to schools in order to more effectively deploy digital practices into the classroom. It embodies the principles of putting schools at the centre of service delivery and enabling them to succeed.

## 9 Scale continuous innovation at the edge

Ensuring the right governance, principles, practices and culture exists to support continual innovation at the edge. This area will support the identification and growth of innovation, capturing better practice and capabilities, test practices across the network and providing the ability to scale across the state.

Section 7

# Vision in Practice

# Enabled by digital, our future learning spaces, schools and central functions will significantly change

As our world moves to a more digitally-enabled future, so too will our future learning spaces and our schools, and, by necessity, the central functions required to enable and support them.

Our future digital environments will behave very differently than today.

The teacher remains at the centre of teaching and learning, but can readily augment their approach with digital resources.

These future experiences are described further in these next pages.



## Future Teaching and Learning Experience the Future

Across our students and teachers, the future teaching & learning experience is different. Personalised learning and advanced learning diagnostics help students perform at their best. Parent & carer interactions are better supported through digital channels, and more information is available in real-time to support their children on their learning journey.



## Schools of the Future

Schools have streamlined their administration processes and are generally paperless. Principals spend more time coaching and mentoring teachers and shaping school outcomes. Transactions with the school are online and cashless, and communication tools facilitate targeted messaging. Schools make underutilised spaces available for community activities outside school hours, and connectivity spaces allow students to stay connected.



## Learning Environments of the Future

Digitally enabled learning spaces support a multitude of pedagogical approaches. Learning environments are connected and digital technologies enhance collaborative learning. Finding, using and displaying additional curriculum content is straightforward and the highest quality teaching and learning resources are accessible from anywhere.



## Centre of the Future

The centre has a school-centric service culture. Its Digital Marketplace provides leading edge capabilities to schools and learning spaces and is regularly updated with new. New digital support staff assist schools adopt and utilise their new digital capabilities right into the classroom. Service channels provide automated support, remotely monitored and issues resolved 24/7.

# The learning space of the future is flexible, personalised and accessible

## FOCUS AREAS

In the future, our learning environments are a confluence of innovative space design, digital teaching and learning practices and digital technologies.

The result: configurable learning spaces that can be tailored to the task at hand, where teachers and students can seamlessly display and interact with digital content, and where assessments are continuous and automated and presented back to teachers with insight and clarity.

Digital content is readily retrieved and easily incorporated into lessons.

Students and teachers alike are adept at connecting with others from outside the learning space with collaboration and participation the norm.

### Seamless integration and support

- The learning space consists of physical, virtual and social elements, through innovative, effective practice and seamlessly integrated into teaching and learning
- This integration is extended to support which occurs in real time, is proactive and predictive and unobtrusive in the learning space

### Digital enablement of teaching and learning

- Teachers and students have resource access and support, meeting their requirements for formal/informal flipped and blended learning approaches
- Formative assessment and feedback tools are commonplace
- Digital literacy skills and capabilities for students and teachers are developed along a defined continuum

### Collaboration and communication

- Students and teachers communicate, collaborate, co-create and share learning virtually.
- Capabilities such as videoconferencing, chat, and discussion forums provide students with access to expert or master teachers
- Students engage in face to face, blended or virtual learning experiences provided by other schools and subject matter experts, locally, nationally and internationally

### Strong equity foundations

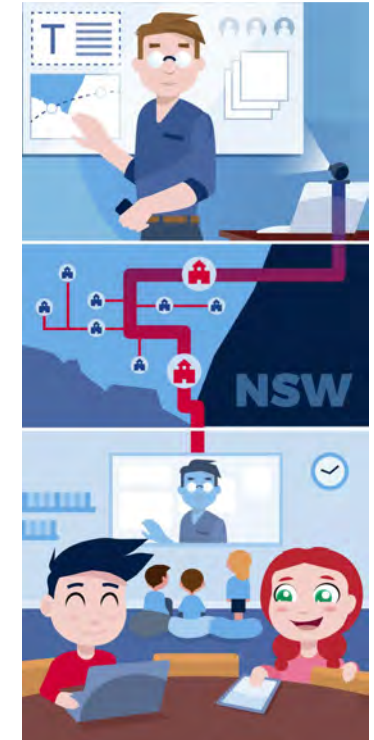
- Improved accessibility and greater digital curriculum resources provide more learning delivery options to all students regardless of ability or location
- Higher bandwidth allows for rapid network access
- Higher device ratios means students and teachers have the tools when they require them

### Adaptable and personalised learning delivery

- Learning spaces are designed with the end user and learning outcome in mind
- Big data and advanced analytics generate insights to enable the personalisation of the learning experience.
- Digital dashboards give teachers and parents deeper visibility into student performance allowing them to adapt content and provide support

### Enabled Maker Activity

- Tools such as robotics platforms, and design and fabrication technologies are in schools and integrated into teaching and learning
- The environment builds capabilities and attributes such as design and computational thinking, problem solving, critical thinking and collaboration



#### Strategic Digital Pillars

- Empower schools to shape their digital journey
- Provide digital support to our schools
- Build our schools digital equity and capability

# The school of the future is seamlessly connected and built around student needs

Our future schools are bastions of community connection, connecting students, teachers, staff and community in different ways.

Most administration services are digital and intuitive. Digital is ubiquitous, augmenting teachers who remain at the centre of learning.

Rich reporting and analytics support decision making, including around pedagogy and program effectiveness.

The school system is digitally oriented to delivering the best outcomes for its students.

## Focus Areas

### Digital devices and connectivity

- Ubiquitous devices and connectivity ensures a seamless user experience and high quality, available support

### Digital literacy

- All staff are digitally literate with professional development paths covering management, administration and teaching as required

### Safe learning environments

- Safe learning environments are accessible to students, teachers, staff and parents inside and outside the school gate

### Virtual lesson attendance

- Students from other schools can more easily virtually attend some subjects available at any school – anyone can have access to selective curriculum

### Community spaces

- Spaces are made available for appropriate community use through online booking

### Accessible environments

- Physical and virtual environments meet individual accessibility needs

### Communities of practice

- Communities of practice support professional development

### Digitised enrolments

- Enrolments are digitised with parents and carers adding information once and updating as required

### Digital transactions

- Transactions performed between the school and external parties are seamless and digitised. Items such as school fees, absences, and student permissions are paperless and able to be actioned any where, any time and from any device

### Attendance

- Attendance management is streamlined and supported through automated reporting and notification tools

### Connected systems

- An up-to-date central source of truth supports student record management, local and strategic reporting and decision making

### Digital learning delivery

- Digital content sourced from a diverse range of sources augments the learning experience and provides access to SMEs

### Communication channels

- Improved communication channels support schools, students, teachers, parents & carers and the school community



#### Strategic Digital Pillars

- Empower schools to shape their digital journey
- Provide digital support to our schools
- Build our schools digital equity and capability

# The centre of the future is a partner to schools, driving and enabling digital adoption across the network

In the future, the centre is the heart of a connected network of schools that work together to drive increased educational outcomes for our students and digitally-enabled benefits for our staff.

Our Corporate functions operate in a data rich environment with decisions, initiatives and actions grounded behind insights from across the network.

Real-time data is collected and analysed from across the network, connected devices, learning environments and platforms, and allows for the pre-emptive provision of support to schools.

Innovation at the edge is fostered and encouraged, and digital excellence is piloted, tailored for school type and scaled across the network.

The centre of the future employs a simplified engagement model and service delivery approach with schools, creating a connected system of support and facilitating shared learnings from across the state.



## Focus Areas

### Data Driven Operations

- Real time, automated data between the centre and the schools gives instant access to KPIs, operational issues and compliance and admin data
- Simplified collaboration and agency connections enables instant information transfer, productivity and inter-agency services, e.g. welfare, health

### Cross-divisional strategy delivery

- The centre coordinates and delivers integrated digitisation capabilities to be available to schools
- Simplified school servicing and single touch channels lead to simplified engagement
- Interactions between schools and the centre are digital by default

### Predictive monitoring

- A network operations monitoring centre provides proactive and predictive support and monitoring across the network
- Network driven access tracking and over-the-air fix services are integrated into the school and learning environments

### Connected Ecosystem

- The central 'radar' identifies and promotes digital exemplars, connecting schools to their peers to learn from and transfer knowledge
- The centre integrates this knowledge within schools and scales excellence across the system
- The centre provides burst support when required into schools for issues or needs

### Innovation

- The centre partners with schools to integrate digital into teaching and learning and to drive digital culture
- Centre-delivered digital services are built on human-centred design principles, partnering with schools, and delivered with an agile approach
- Innovation is fostered and scaled to network level

#### Strategic Digital Pillars

- Empower schools to shape their digital journey
- Provide digital support to our schools
- Build our schools digital equity and capability

# The future experience for our customers is simplified and digitally-enabled



Across each of our customer groups, the future digital experience is now intuitive, supportive and able to be adaptive to accessibility.

The following pages describe their future experiences through illustrative customer journeys.

## Students

- Students feel prepared with the skills, knowledge and capabilities for the jobs of tomorrow. They are not disadvantaged as a consequence of geography, accessibility or access to technology at home. They are supported in their learning journey and receive an engaging education experience that supports their interests, strengths and development needs

## Teachers

- Teachers have the capability, tools and knowledge to combine digital into their teaching and learning delivery. They deploy personalised learning support for their students in a digitally enabled environment and connect parents & carers into the journey.

## Parents & Carers

- Parents & carers interact and transact with the schools in a digitised way, receive real time notifications, have real time visibility into their child's learning journey and can conveniently connect to their child's teacher.

## School Leadership and Management

- School leadership has the data and skills they need to run their school effectively, chart their school's digital journey, and support their students, teachers and staff to achieve their outcomes. They build the capability of staff and improve the agency of teachers and students in their own digital future.

## For Student Admin & Support Staff

- Manual and repetitive administration and compliance activities are a thing of the past. Processes are digitised, automated and supported by digital technologies such as AI, chatbots and advanced analytics that also monitor everything from communications to student wellbeing.



# PAIN POINTS: PRESENT DAY



**Tara**  
Student, 14

## A new and difficult start

Tara's mother has broken up with her father. Her mum, Wendy, a country girl is moving her and Tara to Fellee, regional NSW, to be close with her family.

She is feeling anxious as she leaves her friends behind.

## Adjusting and adapting

"I started school last month, which is okay, I guess. There are some alright girls in my year, but some of the girls who think they're cool have been hassling me. Also I miss my Dad.

The sport here is actually really good. I've joined the athletics team. Athletics Carnival next month. I really want to win - the 400m is my best chance. We train on Tuesdays and Thursday mornings, and then we eat breakfast together. It's a pretty good team, and we don't really care about different ages or anything - Mr Gibson says we're all one team.

**Starting again**  
Being a long way from friends and familiarity is an ongoing struggle for Tara.

**Anxiety of the unknown**  
I feel anxious as my friends are at another school. My student history is lost as are all my medical records, and my academic reports and learning plans.

The teachers don't know anything about me either. I had some trouble keeping up with the reading at my old school, but my teachers knew about that. Now I sit in class hoping they're not going to ask me to read anything out loud.

**Lack of support**  
Not all students receive support in the school system as schools don't have a structured resource allocation models

**Unengaging resources**  
My last school provided a lot of content online which made the lessons more interesting. This school mostly uses textbooks and paper. I find it a bit boring

**Where am I at?**  
It's hard to know how I am performing in some of my subjects. The goals are not always clear and assessments are different depending on your teacher.

**Going it alone**  
At my last school, we all helped each other by collaborating online. It made it easier to understand the subjects if you got stuck on a topic. That doesn't happen here.

**Busy teachers**  
The teachers are always keeping an eye on us here. Lots of them are in the playground at lunch to make sure we behave. But then we hear them talking about having no time to prepare. Why don't they get a break like we do, it would make our lessons better, I'm sure.



# FUTURE STATES

## 2 WEEKS

## 8 WEEKS

## 12 WEEKS

**A better start**  
Increased visibility on Tara's student experience from parents, teachers (and herself!) helps her get a better start.

**Settling in**  
I arrive at my first day and I meet Tegan. She's a "buddy" who'll help me get settled in here, she's really nice.

It makes a big difference knowing how things work here!

**Transferred understanding**  
The teachers here have my school records from my old school. It's such a relief knowing I don't have to sit through a bunch of meetings with Mum and my teachers talking about me.

**Continuity of learning**  
One of my electives, Design and Technologies, isn't available at Fellee, but it turns out I can still take it online. Phew! I would love to be a world famous chef one day.

I log into my student portal and start looking at the work for the term. There are some fun projects, and I can collaborate with other students, just like at my old school.

**Collaborating across the state**  
I actually find one of my friends doing the same online course (she moved schools too). We sign up to do a project together, then a boy from Coffs Harbour joins our project team too! We start talking about what we'll do for our project straight away.

**Learning as a community**  
I'm super-excited. Lisa (my friend from athletics) are waiting for an online lecture to start. It's a food scientist from The Australian Institute of Food Science and Technology. There are 15,000 of us tuned in!

Afterwards, we all get into (online) groups to talk about what we learnt and work on some quiz questions.

**Personalised learning**  
In the Student Portal, I can see what is due when in my planner. I can also see my learning progress, looks like I need to do some extra work in maths (I haven't been doing very well recently).

**On the pulse**  
Mum talked to me today about my grades. They haven't been very good recently. She got a notification from the teacher about my results and sent an email to explain what's going on (her and dad have been arguing on the phone).

**Mental wellbeing**  
I am using the Wellbeing platform to talk to a counselor. Mum got me to get on it. At first I didn't want to, but I'm actually kind of into it.

**Learning as a family**  
Mum and I have been working on a maths project together. We log onto the portal in the evenings and do the daily exercises, then we watch telly when we're done.



**Measured improvements**  
I've just gotten a notification on my Student platform - my results have been getting really good. Mum just texted me to say well done.



# HOW WE GET THERE

Improve student administration and school management

- Automation
- Self-service

Strengthen our digital and equity foundations

- Improved digital literacy

Drive collaboration and communication

- User portals
- Communication tools
- Collaboration tools

Enhance our data, analytics and reporting capabilities

- Advanced and predictive analytics
- Enhanced reporting capabilities

Deliver digital teaching and learning

- Personalised learning
- Flexible subject delivery

# PAIN POINTS: PRESENT DAY



## Kirstin

School Administrative Officer

School admin is a perfect fit for me

I love getting things right. I am meticulous, organised great with numbers. I did a Diploma in Business Admin at TAFE, and after five years of more casual work, I found this role just around the corner.

Keeping a school running is a pretty important job, it can be tough at times, but next year I'll be celebrating my 20th year here, so I must be doing something right!

The first port of call

Every day I interact with different mixes of people: Principals, teachers, parents and suppliers. I am the first face people get to know here, whether it's answering emails or calls, or in person.

I've learnt that things never happen in the order you think, that goes for parents as well as our processes! I always have multiple things open at the same time so I can jump back and forth between applications. You just find a way, I suppose.

**A balancing act, to say the least**  
Kirstin is an experienced hand, but with so many balls in the air at once, the pressure is on not to let anything drop

**A cacophony of queries**  
I've been dealing with enquiries for 20 years, but over the past ten, parents have started asking more and more questions. Mostly it's fine, but during enrolment, I've hardly got time to scratch myself, let alone check whether your little dear has handed in their permission slip yet.

Sometimes, we have issues with leave too, too many of our team off at once just means the work banks up till they get back. Not great for the teachers, but that's just the way it is.

**Filling the holes**  
As a school, we rely a lot on volunteers. Getting parents in at short notice to help out can be a real bother, and I feel bad always calling on the same ones.

Mind you, the paid ones aren't much easier to wrangle. Teachers assistants, admin staff, whoever, when we're busy, everyone's busy too!



**Problems with process**  
I've done my best to improve our processes, but things like permission slips for excursions are still a huge headache. Unfortunately, an email just won't suffice, so we're stuck with paper.

Payments aren't much better, I'm quite good with keeping numbers in check, but chasing up different parents for different excursions quickly gets overwhelming.

**Digital anxiety**  
I have done a few computer courses in the past few years, but when some people come in here asking questions, it's like they're speaking a different language. It's like they expect me to be an IT specialist too. No thanks!

We handle a lot of personal and financial data too. Whenever I hear about these big security breaches, I worry about our school. Would it be hard for someone to get into our system?

## FUTURE STATES

### 2 HOURS

**Optimising operations with ease**  
With more and more menial admin tasks being automated, Kirstin is investing more time and effort into supporting parents, teachers and children.

**Smarter systems**  
Normally, it would be pandemonium at this time of year, but enrolments are much easier for administrators like me and parents these days. Hooray for integration.

**Easy-access resources**  
Once I'm off the phone, I get a notification that there are some new enquiries coming through from the School Finder contact form. I just respond with a link to the right resource. Easy. There's also a query that's obviously meant to be for our Yr 2 teacher, I can just add that to the Yr 2 dashboard and they'll respond.

**Dedicated Applications**  
Another email is sitting in my inbox from the principal, apparently I need to organise some cladding for the sports shed. I'll need to look at AssetTracker after lunch.

**Cyber-confidence**  
Our concerned parent arrives for her tour, and my admin assistant walks her around the grounds. When they return, I chat to her about the cyberbullying systems we have in place. The info night I went to last week helps me explain some of our strategies and safety checks, and she seems genuinely reassured to know that we have specially-trained staff.

I log onto AssetTracker after she leaves and I see that the sport shed exterior is due for a refurb in the next 6 months. I select a building services provider from a dropdown list and send the report through.

### 2 WEEKS

**Seamless asset management**  
The handyman are in today to fix up the sports shed. The appointment was in the calendar 24 hours after I sent the report, such an easy process.

### 2 MONTHS

Clara's mum comes in for a chat with her teacher, and stops by admin to say hello afterwards. I didn't even know she was coming in (most parents just do it through Skype these days). Clara's teacher talked her through the student dashboard and apparently she's thriving. How nice.



## HOW WE GET THERE

Improve student administration and school management

- Automation
- Self-service
- Asset management

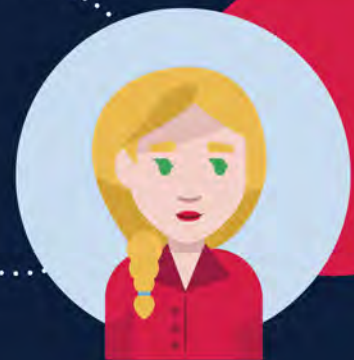
Strengthen our digital and equity foundations

- Improved digital literacy

Drive collaboration and communication

- User portals

# PAIN POINTS: PRESENT DAY



## Elizabeth

Secondary School Head Teacher

I'm here to make an impact on their lives.

I wanted a job that allowed me to make a difference, do good things and have a big impact on the world. I decided on teaching.

I ended up back at Fellee High where I grew up after I graduated. I've been here ever since. I love working with the teenagers here; watching them grow into adults with their own unique view on the world is why I get out of bed in the morning.

Taking the lead

Last year I took on more responsibilities and became a head teacher.

Everyday is a juggle between teaching and managing. I oversee programs for gifted children, provide mentoring and coaching to staff, and participate in decision-making at the school level.

The opportunity to influence changes that go beyond just your classroom is a pretty amazing responsibility.

**Wasted time, missed opportunities**  
Elizabeth is always looking for ways to improve, but the system is working against her.

**Struggling to develop skills**  
There just isn't enough time and incentive for professional learning and development, and if I do find the time, getting access to learning resources is difficult.

**Digital difficulties**  
It takes a long time to curate digital learning content. Finding and organising it is difficult, and I'm not sure doing it as 'safely' as I should be.



**Not seeing the whole picture**  
It's really hard to get a cohesive overview of what's going on with individual students. There's no holistic assessment or record of achievement, nor is there a central system or record I can contribute to.

It makes it hard and time-consuming for me to develop formal assessment reports. But more importantly, it's nearly impossible to gather the kind of insights that could be used to improve their whole learning experience.

**Missed opportunities to collaborate**  
There are so many great learnings and resources the teachers here could be sharing, but we just haven't got the right tools for collaborating or communicating.

We end up losing out on easy opportunities to improve the way we teach, and instead waste valuable time all searching for the same kind of things.



## FUTURE STATES

**Growing and contributing**  
With access to new resources and opportunities, Elizabeth is lifting her teaching game.

**Access to the best**  
Here I am again! I'm a bit of a fan of the Digital Learning Resource Hub.

I've got my filter set to surface all the curriculum materials I need for my classes. I also give back, and make sure I add anything new that I use which could help other people.

**Seamless education**  
My classroom digital display has the name of my class and today's topic (Trigonometric theory) and materials. There's some new resources on the Digital Learning Resource Hub that I think will be handy today.

I build out my lesson plan and assign some video and self-paced examples to my students.

**Personal and digital**  
My students dawdle in. My 10-minute introduction captures their attention, then I play the video and distributes the exercises to their touch-screens.

**A collective view**  
I can see how they're progressing with the exercises through the student dashboard, and review their academic and emotional analytics.

By knowing them better, I can teach them better. The system allows me to deploy good content that meets their individual learning needs.

**Smarter with the system**  
As well as the things I know will help them, the Digital Learning Resource Hub uses their formative assessment data to recommend support material. It's really helpful for reinforcing learning with failing students, or helping excelling students get stuck into more advanced materials.

**More personal connections**  
The supported classroom planning, combined with automated marking, gives me valuable face-to-face time with students who need it most.

**Progressing on my own terms**  
I'm pretty excited to be digging a bit deeper into artificial intelligence. All the resources I need are here on the Learning Resource Hub.

I've just joined a collaborative project with some other teachers around the state - who knew there were so many of us interested in AI!



**Timely notice**  
I open up my computer and get a notification that one of my year 9 students, Tara, has recently taken a dive in her results.

At that exact moment, I get a message from Tara's mother. It seems the parents have just separated and it's been taking a toll on Tara's emotional and academic wellbeing.

**Effective action**  
I remember seeing that Terence Chi-Shen Tao (famous Australian/American mathematician) is broadcasting a live lecture. I know how Tara gets wrapped up in numbers, so I book in the class for the session.

As the lecture starts, I see Tara is captured (a long with the rest of the class), and they're soon collaborating on the problems being posed. It's good to see.



## 30 MIN

## 2 WEEKS

## 4 WEEKS

## HOW WE GET THERE

Improve student administration and school management

- Automation
- Self-service

Drive collaboration and communication

- User portals
- Communication tools
- Collaboration tools

Enhance our data, analytics and reporting capabilities

- Advanced and predictive analytics
- Enhanced reporting capabilities

Strengthen our digital and equity foundations

- Improved digital literacy
- Connected learning spaces

Deliver digital teaching and learning

- Personalised learning
- Flexible subject delivery
- Digital assessment tools

## PAIN POINTS: PRESENT DAY



# Patrick

Single father of two

Being a single dad is already a juggling act.

Working from home helps, but I still struggle a bit when it comes to sorting school stuff.

My daughter Cindy lives here, and Jaydn stays over one night a week, so I try to get the info I need out of them. But when it comes to managing alternating timetables and excursions, I'll admit, I'm a bit lost online.

**Plenty of friction**  
Patrick is coping with his school interactions, but it's anything but seamless.

**Not being digital**  
Downloading and printing forms, then filling them out and returning them to the school is incredibly inefficient.

**Starting from scratch**  
If we change schools, I have to go through the whole process again, including going through my child's needs all over again.

**Managing payments**  
I lose track of what I've paid for and what I haven't. Sometimes I get an email, other times it's a slip, occasionally I get a letter. Payment is a pain.

**Limited time**  
With work and two kids, I've already got a lot on my plate. These convoluted interactions with the school are chewing up my time.



## FUTURE STATES

### 60 MINUTES

**Enrolling and educating**  
Patrick's needs a new school for year 7, and his son Jaydn just needs to catch up.

**An easy start**  
I Google 'schools in my area' and clicked on education.nsw.gov.au. The School Finder feature knows where I am and shows me options in my catchment area, along with a few key details. That's handy!

**Finding the right info**  
I notice one of the schools has a speciality in Performing Arts. Cindy would love that. The school sounds good, so I take a virtual tour of the school - impressive facilities. At the end I see an 'Expression of interest' option. I just punch in Cindy's student number and my details and all the info appears in the registration form.

I hear the phone ring and save the form to complete later.

**New challenges**  
It's Jaydn's teacher on the phone - apparently his results are slipping. We both log into the Education Hub dashboard to review his grades and chat about some ways I can help him improve at home.

**Productive conversations**  
After dinner, Jaydn and I sit in the study and go through some of the online learning materials in Scrapbook together. The exercises are a great source of feedback and help us to have a chat about some areas for him to focus on.

### 2 HOURS

**Finalising important tasks**  
Once the kids are in bed, I log back into the School Finder for Cindy. The virtual assistant on the website recognises me and gives me a few handy prompts to finish registration.

My ID details are sent automatically to the school as part of the process. The NSW Government already has them stored in their 100% ID platform, which makes it way easier than it used to be.

I use the virtual assistant to book a time to meet with the Principal and get a better rundown of the school, then I shut my laptop. Job done!

### 2 WEEKS

**A helpful reminder**  
The day before my appointment, I get a reminder sent to my phone. It's got a link to video introducing the Principal and a starter pack.

Once the video finishes, I take a peek at Cindy's education dashboard. I can see some of her classes and learning materials are already locked in - she'll be excited to hear about that drama class!



## HOW WE GET THERE

**Drive collaboration and communication**

- User portals
- Communication tools
- Collaboration tools

**Deliver digital teaching and learning**

- Personalised learning
- Flexible subject delivery
- Digital assessment tools
- Digital learning pathways

**Enhance our data, analytics and reporting capabilities**

- Advanced and predictive analytics
- Enhanced reporting capabilities



# Lewis

Primary School Principal

## It runs in the family

I come from a long line of teachers – I guess a love of education is genetic.

Teaching was a natural choice for me. I earned a bachelor's in education and then went off around NSW, teaching primary school English and getting to know the state.

My passion always gave me a bit of a push. As soon as I had enough experience, I moved from teacher to head teacher, then to assistant principal, and ultimately to school principal.

## The hectic life of a principal

It's not easy to get stuck into much during the day. My day is a constant flow of phone calls, emails, and hallway conversations. I also have meetings with staff, parents, students, and governing bodies. So actually, most of my work has to wait till I get home – planning, coordination, procurement – all done in my home office.

Sacrificing my personal time is far from ideal, but it's just the way the job works. During the day it's my duty to keep the school running, and that means being accessible to staff, students, and parents.

It's no cakewalk, but I wouldn't change it for the world.

## PAIN POINTS: PRESENT DAY

**Not operating at our best**  
Lewis is a capable leader, but is being held back by systems and sight lines.

**Where to improve?**  
We don't have good visibility of staff skills which makes it tough for me to identify training opportunities or to work out where I can invest our (limited) resources for maximum impact.

**Scattered data**  
We produce a lot of data, but when it's not being unified or regularly updated, it can be really problematic. Parents end up with duplicate data, and we only find out when they come asking questions.



**Struggling with inefficiencies**  
We simply don't have enough admin staff to complete all the tasks that arise. They do their best, but our tools and processes are just not efficient enough. I end up covering the shortfall – doing administrative and reporting tasks that really aren't part of my remit as a leader.

Our asset management process is also unstructured, which makes roll-out the beginning of the problem, not the end.

If only we could pick from best-in-market solutions and assets for our schools, maybe some kind of standardised selection/deployment process!

**The recruitment battle**  
We just don't get the diversity of contemporary experience that we need in our school. I'd love to be recruiting talent from both the industry and community into teaching at our school, but our search for candidates just doesn't surface these people.

**Payment pains**  
Fee collection is a long-drawn process here, and payment reconciliation takes up a lot of my staff's time.

## FUTURE STATES

### 2 HOURS

**Optimising operations with ease**  
As he goes through his regular routines, Lewis is uncovering ways to improve the school for everyone.

**A simple snapshot**  
It's time for my mid-term review of the school's business plan. I log onto the dashboard and see my balance scorecard. It's up to date, and suggesting a few matters might need my attention.

**Opportunities to improve**  
I can see our scores for digital skills are not where they need to be. Some of our teachers still haven't completed their refresher training, so I request some training to familiarise them with the updated online learning programs. It also looks like our digital hardware inventory isn't meeting demands – that could be holding our students back from learning and performing. I'll pop that on my to-do list.

**Getting the word out**  
I've wanted an ITC Support Officer at this school for almost two years now. Time to make this happen. I click on the RECRUITMENT section on Education NSW, and get started. The request form is re-populated, and I quickly request advertising and place the ad. Fingers crossed!

**Sharpening up my staff**  
All of my staff have skilled up with the digital refresher training. As a result, they're all across the Digital Learning Resource Hub. After seeing how the content and collaboration space helped them plan their classes, I have a school of converts! I'd suggest their classes are a bit happier with the high-quality teaching resources too.



### 3 WEEKS

**Better budgeting**  
Ah, budget time. This used to be a nightmare, but not anymore. I can see that 80% of our parents have paid their voluntary school contributions, and with a click, I send a reminder to the other 20%. Nowadays, I can see our real-time cash balance too. It makes day-to-day investment decisions far easier.

**Breezy procurement**  
Time to tick computers off my to-do list. I use Marketplace to browse approved suppliers, and quickly find a solution that suits our needs. With a straight forward procurement process, I can order the machines and cross it off my list. Now our teachers will be able to run the latest versions of Creative Cloud (and the

### 6 MONTHS

**Impactful recruitment**  
I can't believe what an impact Kyle, our new ICT Support Officer, has made in his first 5 months! The staff and students have all been raving about him.

**Seeing results**  
My DEL is here for a school review. We go through the dashboard and, as I expected, we see a clear upswing in academic results, staff/student engagement, and digital literacy. This place is humming!

## HOW WE GET THERE

Enable digital maturity evaluation and benchmarking  
- Digital maturity evaluation

Improve student administration and school management  
- Automation  
- Self-service

Strengthen our digital and equity foundations  
- Improved digital literacy

Drive collaboration and communication  
- User portals  
- Communication tools  
- Collaboration tools

Deliver digital teaching and learning  
- Personalised learning  
- Flexible subject delivery  
- Digital learning pathways  
- More flexible learning delivery

Re-orient the service model to better support teaching & learning, and empower the edge  
- Enhanced service support  
- Service catalogue

Enhance our data, analytics and reporting capabilities  
- Advanced and predictive analytics  
- Enhanced reporting capabilities

Section 8

# Building Blocks

# We our approach to deliver system-wide change requires a series of building blocks to be in place

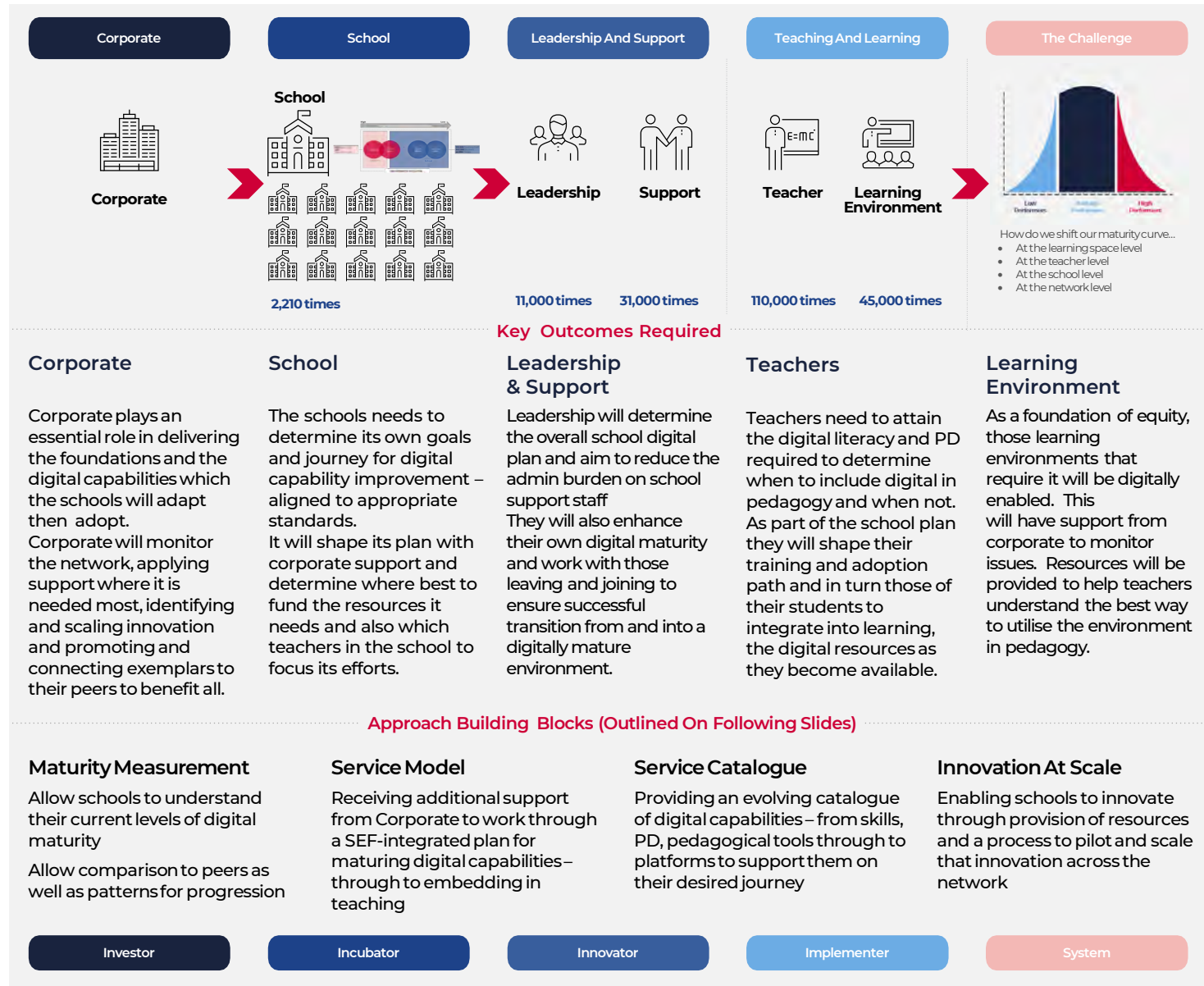
Centrally driven change programs are often expensive, high risk and prone to not achieving the return on desired results in the time required.

Understanding that schools are an inter-related network of small communities, each with their own local contexts and ambitions, is an essential consideration within the approach.

Achieving change at scale requires an approach that will work with the varying maturity and needs of each school and teacher.

This approach requires some key building blocks which will create the foundations of change – coordinated by the centre, by delivered within the schools.

This will ultimately form a self-sustaining network of change management, digital capability building and innovation.



# We will implement a digital maturity improvement framework that drives continual capability development

The digital maturity improvement framework starts with enabling school leadership and staff to assess their digital maturity across their business capabilities.

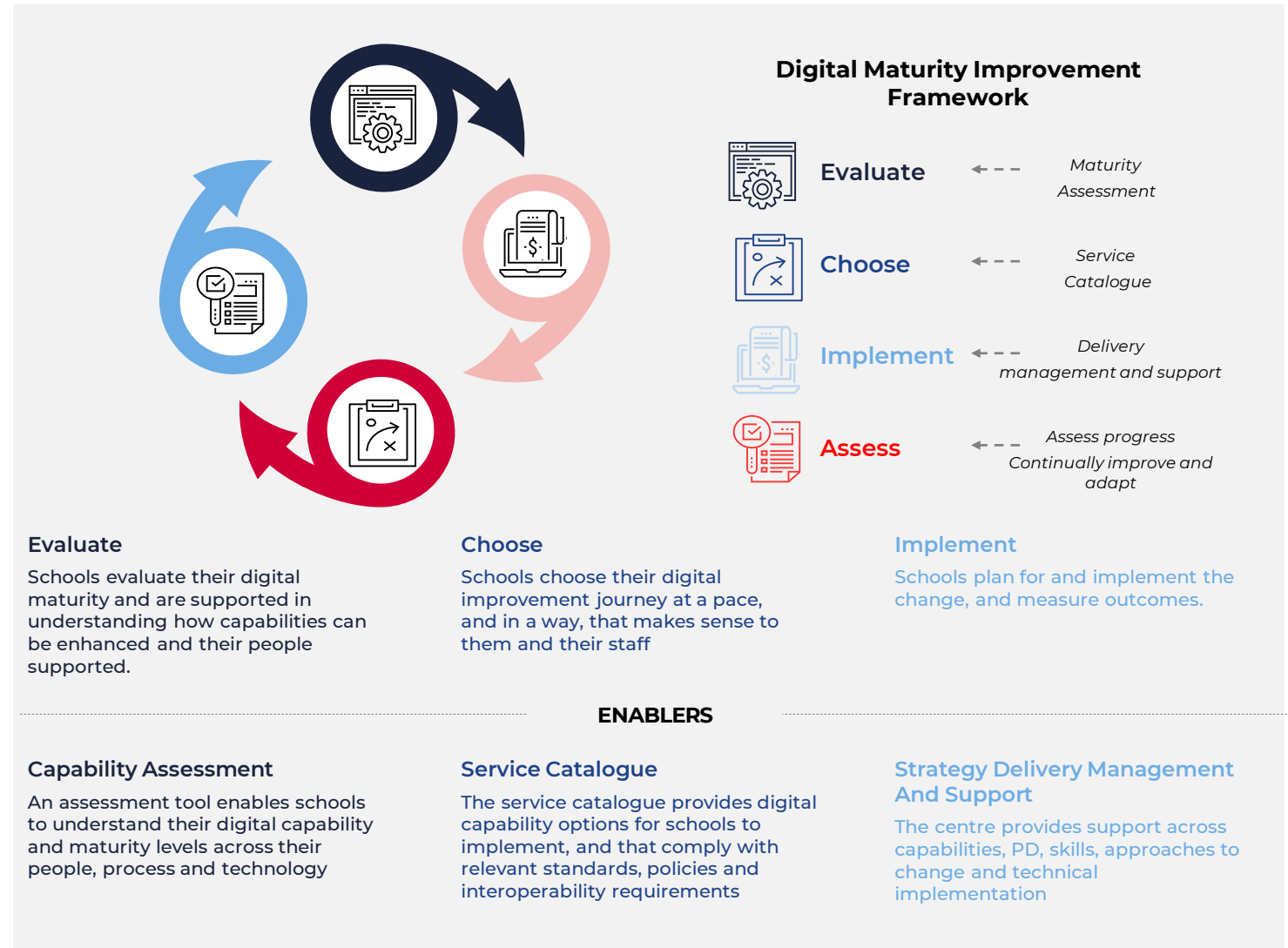
They then design, own and plan their own digital maturity journey.

High quality digital capabilities to support this journey are available through a service catalogue, and are pre-approved and conform to Department policies, standards, and interoperability requirements.

The central part of digital capability is our people and skills, and improving the digital literacy of all our staff.

Support and implementation services focus on getting the most out of digital in our teaching and learning.

Schools become the agents of their own change, and are able to exercise control over their digital maturity progression





# The framework will enable schools to progress their digital capabilities across people, process and technology

The maturity assessment needs to be simple to understand and engage with and provide a holistic assessment of a digital maturity across people, process and technology.

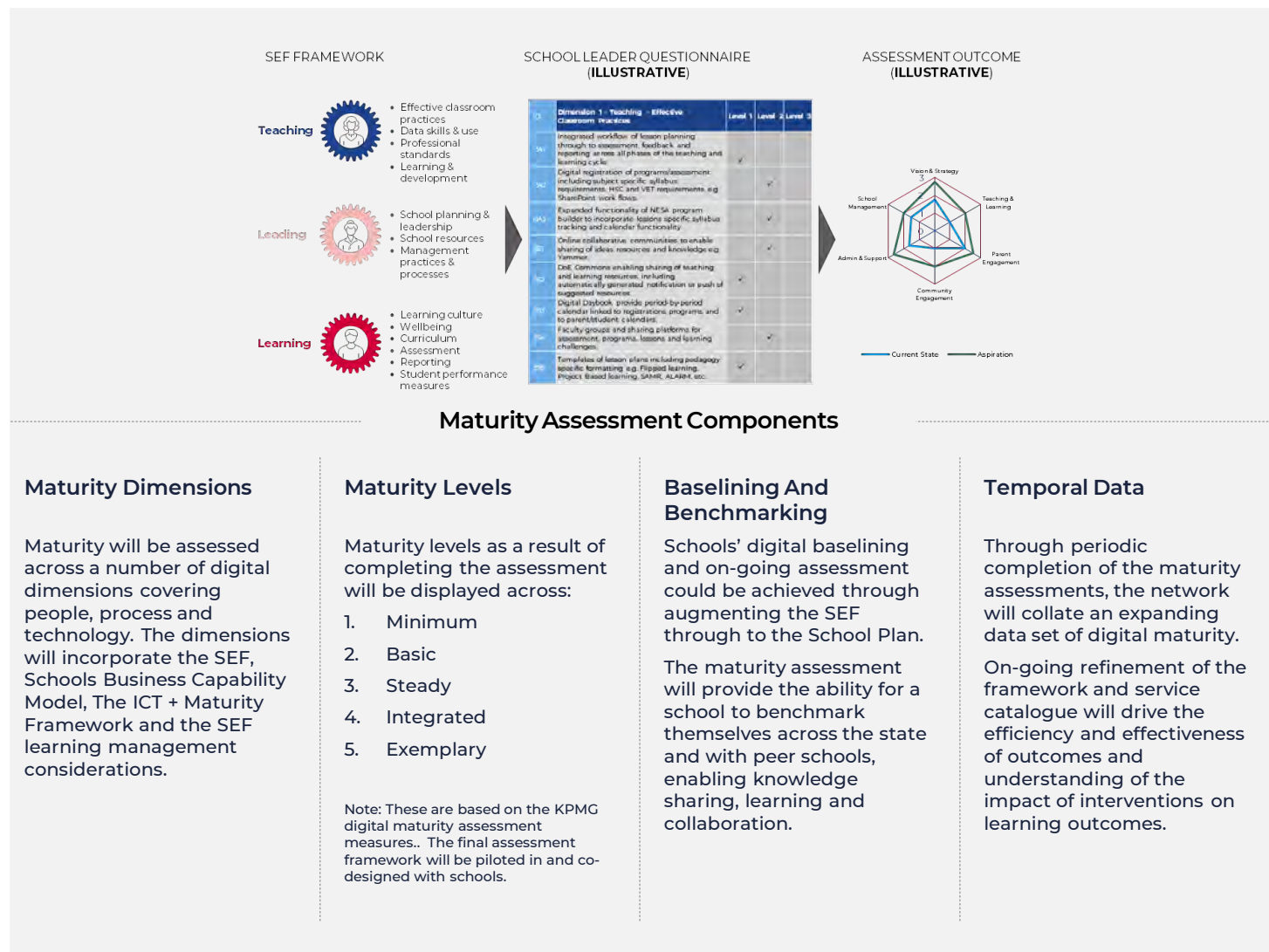
The assessment will incorporate established frameworks such as the SEF and ICT+.

Through periodic usage of the assessment, schools will identify recommended uplift areas and then be directed to appropriate resources to assist.

This process is designed to empower schools in their uptake of digital.

It will cater for schools of differing levels of maturity and will integrate with the school planning process and the DEL/PEO network.

Schools will be empowered to design and enhance their own digital journey, build communities of practice, hothouse concepts and both receive and contribute capabilities as needed from a digital service catalogue.



# We will build a digital service catalogue that enables schools to progress their digital journey

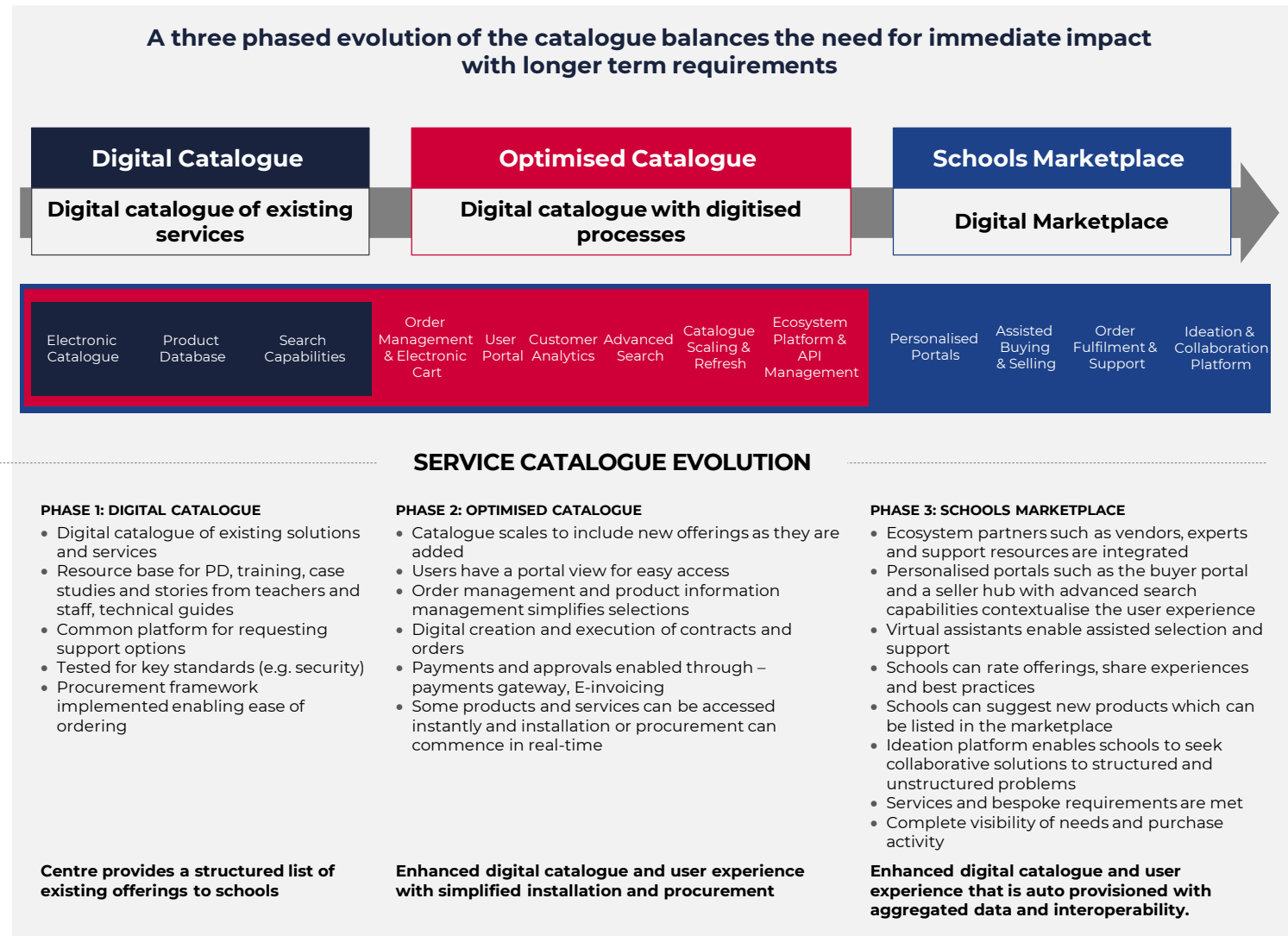
Once schools have determined the areas that make the most sense for them to develop, the service catalogue provides the options and resources to enable them.

It is a catalogue of available solutions and services to uplift their digital maturity.

Over time, the service catalogue evolves into a digital marketplace enriched with user reviews and feedback.

The service catalogue will contain resources for teaching and learning operations, school management and student administration.

Importantly, solutions in the catalogue are selected for being leading, pre-approved, comply with standards, policies and interoperability requirements, and includes PD, case studies, school feedback as well as technical advice.



# We need to re-orient our service model to better support teaching and learning in the school and empower the edge

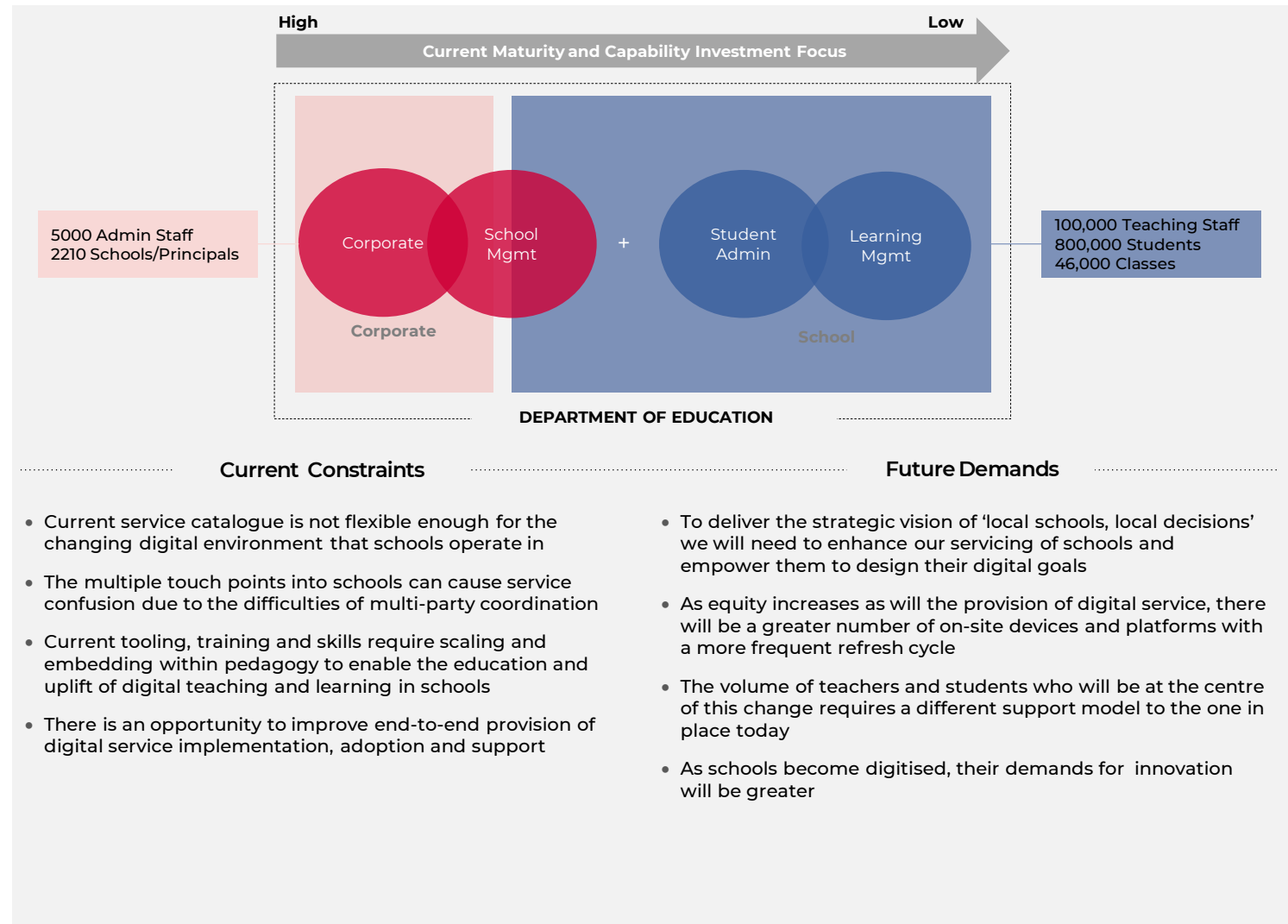
To date the main focus of investment has been on corporate and school management functions as well as student administration.

Teaching and learning within the classroom has not received as much attention.

This has left technology implementation and digital enablement in the classroom with inconsistent levels of maturity and utilisation.

We have consequently accumulated debt in areas across our platforms, property, processes, professional development, people & culture and pre-service, causing friction in the current environment.

As we leverage what we have, and provide additional support into the teaching and learning environment, we will capitalise on the opportunities digital now affords us.



# Changes in the service model requires a different partnership with schools and new resources to support them

Across the NSW education system there are a variety of internal and third party providers that deliver services to schools.

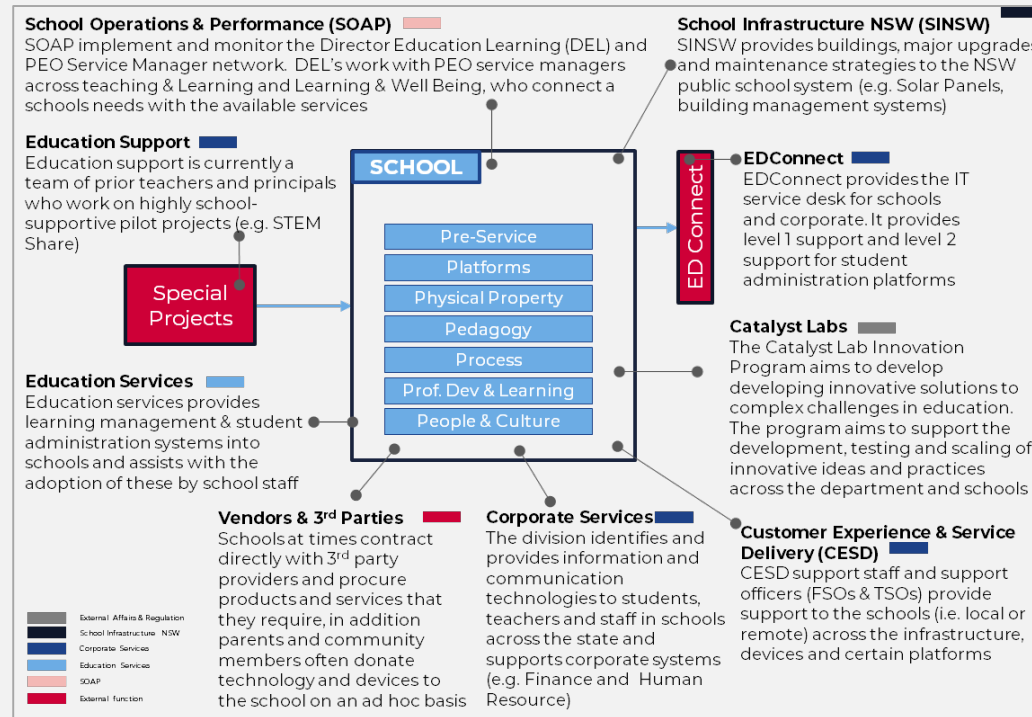
These include professional development, education support, digital, technology and communications systems and task processing.

The current support landscape (opposite) is complex and siloed, leading to inconsistent service delivery.

As present, there is no dedicated support for the effective use of digital in the classroom.

A revised service model will address both current service constraints and future demands.

It requires teaching-specific support via local resources to drive digital adoption.



## Recommendations

- Schools will require additional support focussing on the planning, readiness and implementation of digital services and technology into the teaching and learning environment of the school
- This resource type will be the focal point of digital promotion within the school (i.e. Digital Liaison Officer - DLO)
- This new role, working in alongside the DEL and the Technical Field Support staff, will provide a coordinated approach within the Department of service into schools
- This new resource will work with school leadership to champion digital change and develop their school digital plan, and with teachers to support them in professional development and pedagogy integration
- Digital adoption will tailored in partnership with the school, selecting the services required each year to align to the digital school plan
- Local resources in the school will be deployed to provide on site digital adoption in to teaching and learning.
- The centre and the DLOs, will keep aware and in pace with market digital trends across training, development, support and digital technology for learning
- As new trends emerge, the coordinated piloting of these will occur so that the school network can adapt as required to change

# Data and analytics are key to the acceleration of digital adoption and its effectiveness

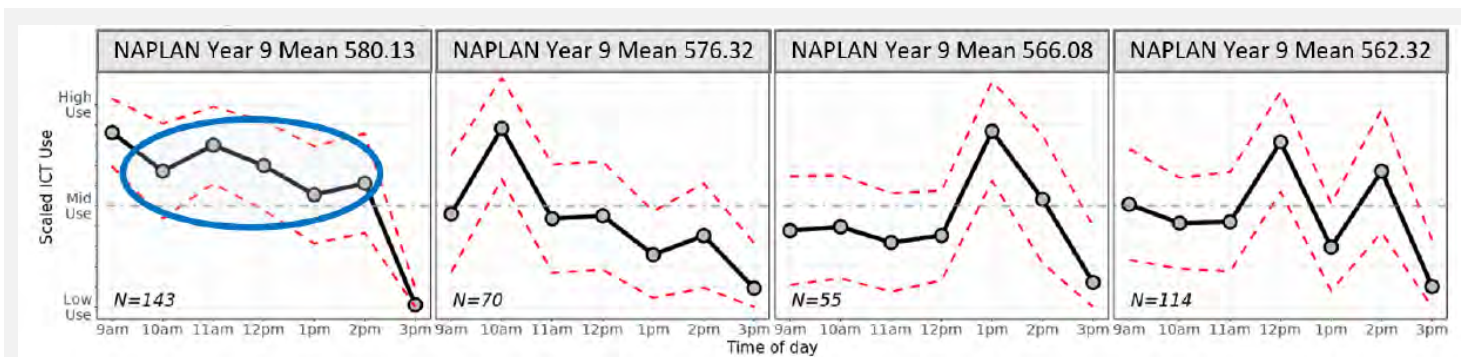
Big data and advanced analytics provide reliable insights into pedagogy and teaching efficacy, and to improve decision making in shorter time cycles.

The digital economy is built on an organisation’s ability to manage their information assets, and make faster-paced more forward-looking evidence-based decisions.

In order to capitalise on its rich information assets and deliver personalised learning at scale, the Department will need to make investments in new data capabilities.

These include the need to ensure ethical safeguards are established around student data and to resolve pain points with respect to interoperability and disparate data sources, literacy of data use as well as large-scale data ingestion and interpretation.

Driving cultural change around data will be critical. Data must be recognised for its strategic value and treated as an enterprise asset.



It is increasingly important for the Department to invest in advanced analytics capabilities to provide greater evidence of the effectiveness of programs and pedagogical practices, such as this example showing a positive correlation between the use of ICT in the learning environment for educational purposes and improved NAPLAN outcomes. Investment in these analytic capabilities will address existing information asymmetry, and provide evidence of the best ways to deliver learning.

### Current Constraints

- Fragmented data across multiple student administration, learning management and assessment systems frustrate the creation of an integrated source of truth for student data – necessary for developing digitally-enabled personalised learning
- Data literacy is an opportunity area that has the potential to improve information understanding, improve decision making and to uplift data quality
- The number of schools and students in the network will make the central processing of student data difficult. This will require consideration of alternative approaches such as AI-based data processing at the edge.

### Opportunities

- Develop a data and analytics strategy to provide a clearer pathway for the ongoing investment in data capabilities and technologies
- Improve data literacy, including through training, PD and greater exposure to data insights and application
- Coordinate / consolidate existing capabilities into a Data & Analytics Centre of Excellence to leverage scale and expertise, and use it to identify and answer important business problems as real-life examples and test cases
- Invest in 'golden record' management – the creation of a single version of truth of relevant systems of record that encompasses relevant student and learning data.

# To move from strategy development into execution, we need to mobilise to an outcome-based governance model

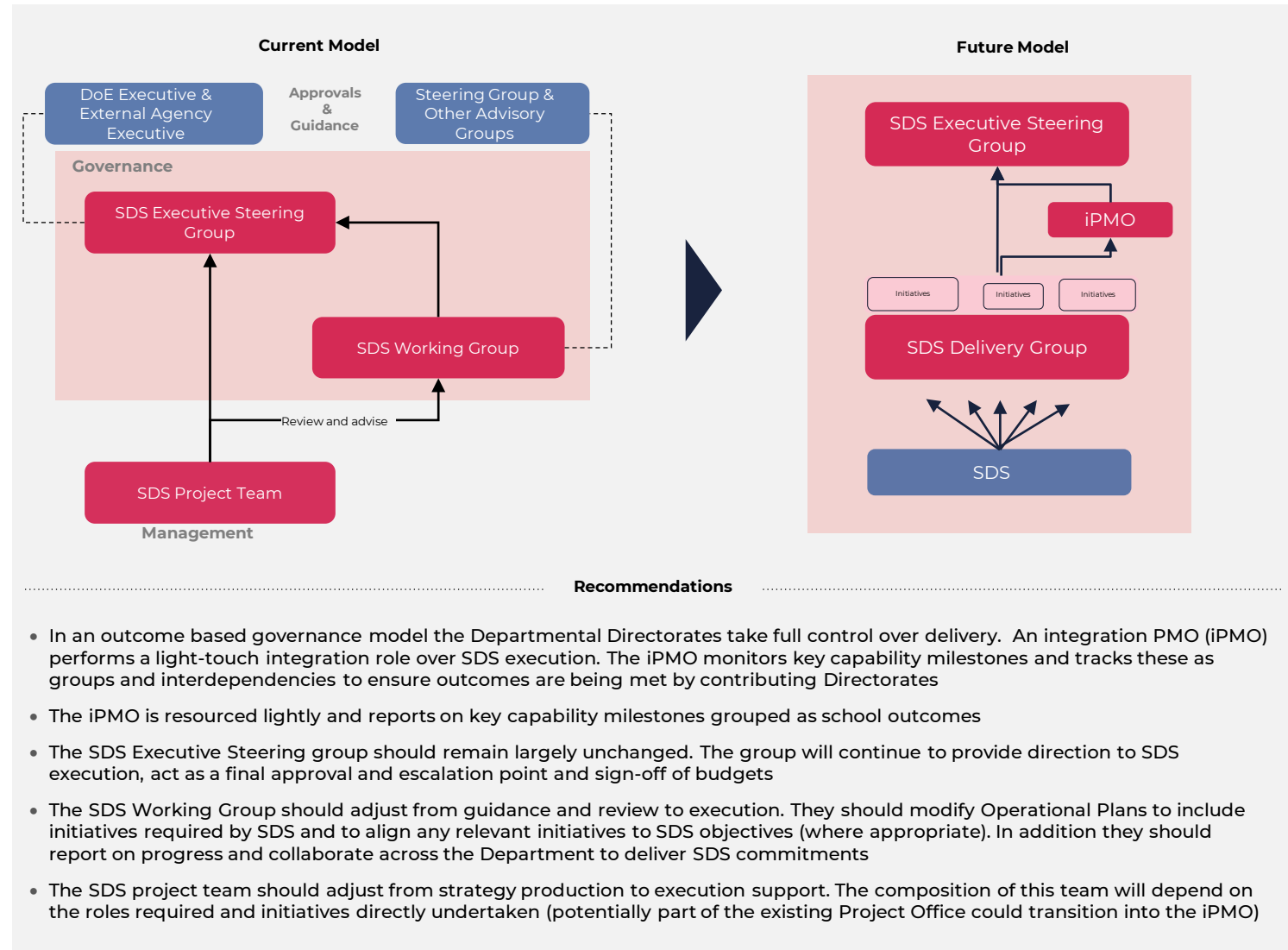
The recommendations and strategic focus areas (SFAs) within this strategy will require intra-department collaboration for execution over a number of horizons.

Horizon 0 will require transition activities to occur for such as the baselining of digital maturity across schools; collation of initial digital assets to populate the service catalogue; and piloting / scaling of school-identified digital concepts in schools

Coordination is a priority and the governance structure will require some crucial elements:

1. Senior level sponsorship and endorsement from the Secretary
2. Nomination of directorate leaders for H0 & H1 initiatives
3. An accountable executive and dedicated full time program delivery lead to drive execution

The SFAs will require ownership of delivery from across the Department and as a result the governance model will be adjusted to become execution focused. It requires extension to have permanent membership of the PPA and SPC.



Section 9

# Roadmap

# The strategy will be delivered over three horizons to deliver transformative change

The Schools Digital Strategy starts with setting the right foundations for success.

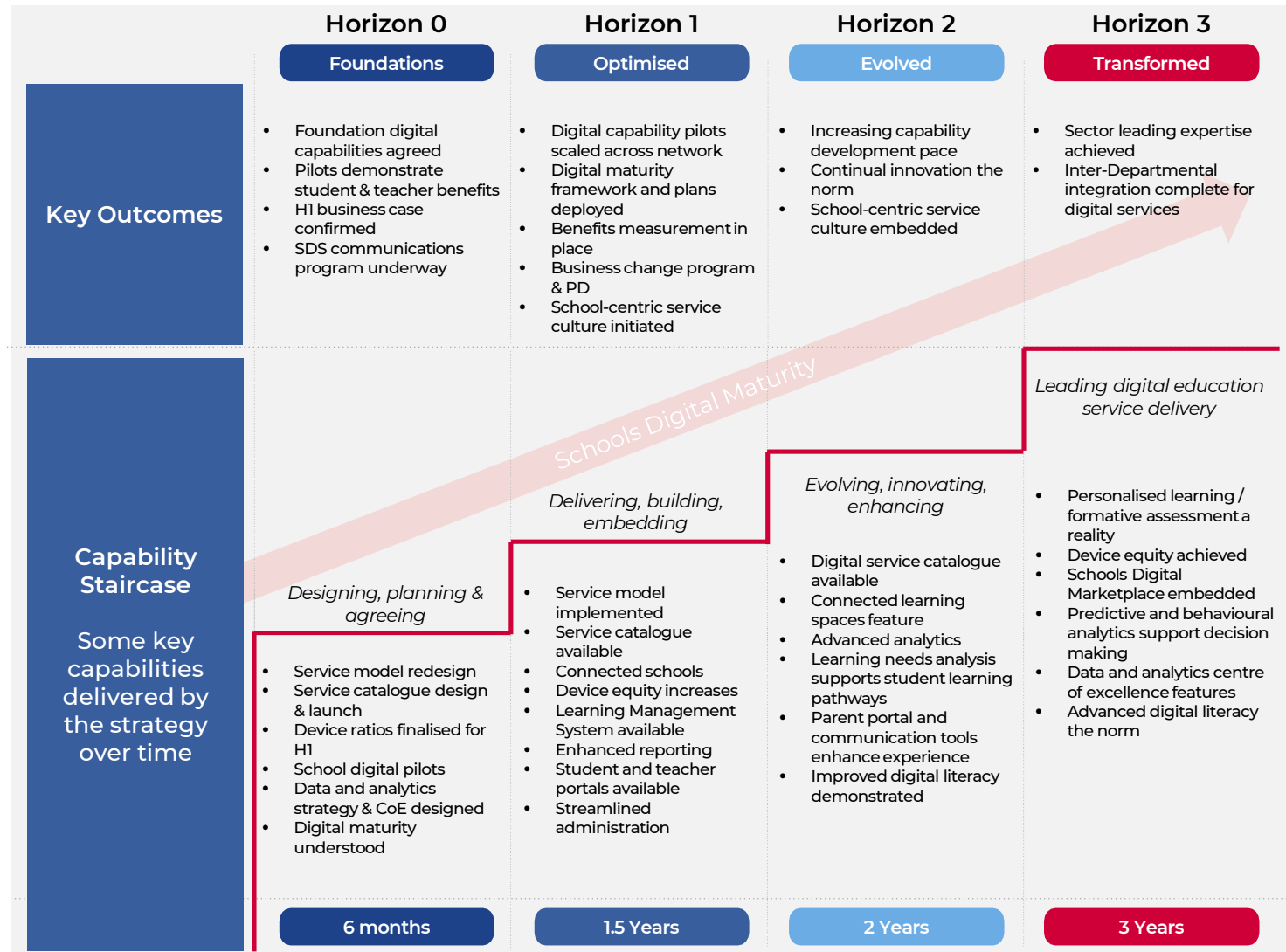
‘Horizon zero’ commences immediately and will concurrently build the digital maturity framework while scaling existing high quality digital assets via school pilots. Mobilisation activities for Horizon 1 occur in parallel.

Existing digital initiatives aligned with the strategic direction continue as planned, for example. HCM project, Digital Resource Hub and Connecting Metro Schools.

Governance of the Schools Digital Strategy is adjusted to become execution focused and enhanced to have permanent membership of the PPA and SPC.

SDS activities are monitored within a SDS Integration Office to ensure coordinated delivery.

Approval via Treasury of Gate 0 will be sought August 2019, and Gate 2 approval of Horizon 1 by end of 2019.





# The nine strategic focus areas will be delivered over seven years, deploying changes for a very different DoE

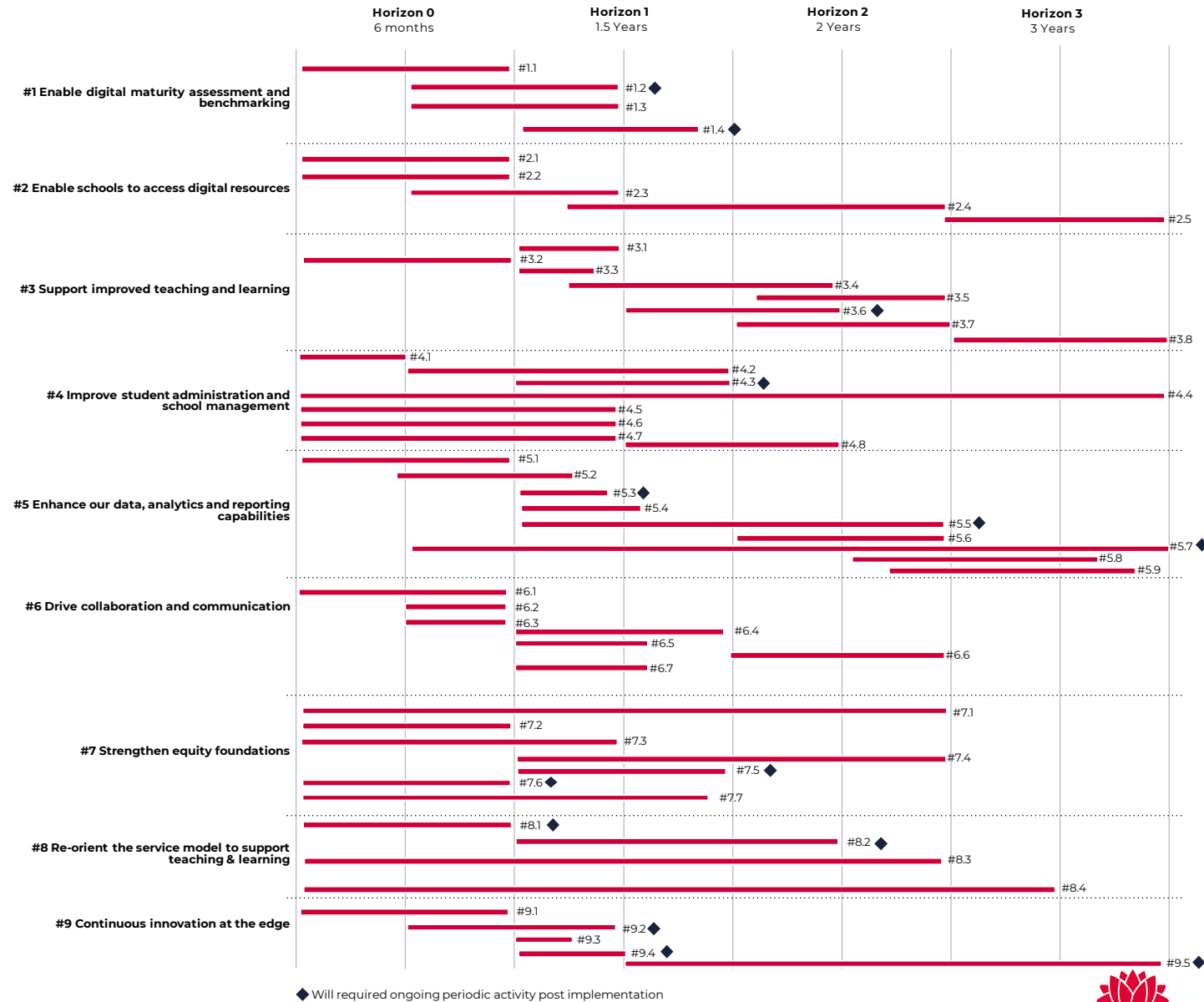
Starting with Horizon 0, incremental changes are made to the digital capabilities and support structures (i.e. the Digital Liaison Officer) of the Department that will continue over the life of the strategy.

To immediately delivery benefit, existing digital assets will be collated and used to direct pilots into schools. Learnings will be incorporated and then scaled across the school network.

We will redesign aspects of our operating models and align it to the principles of agility, school centricity and human-centred design.

The roadmap opposite is a depiction of the anticipated strategy timeframes and initiatives.

Following pages provide greater detail on the proposed initiatives, their duration, followed by benefits and order of magnitude costing.



# 1. Enable digital maturity evaluation and benchmarking

This involves the development of a digital maturity assessment framework that provides an ongoing maturity evaluation process to support school decision makers to make the best investments in their digital capability.

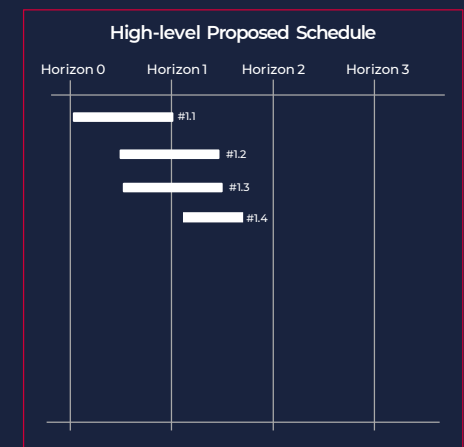
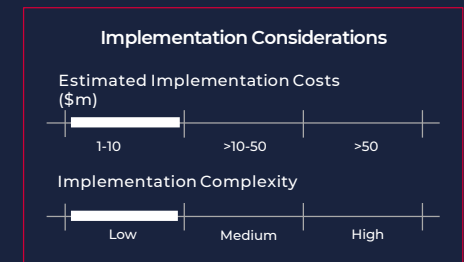
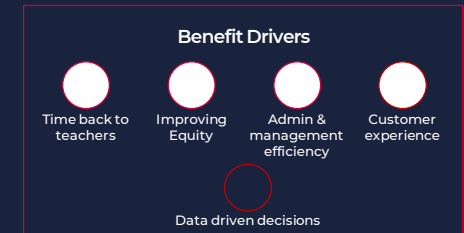
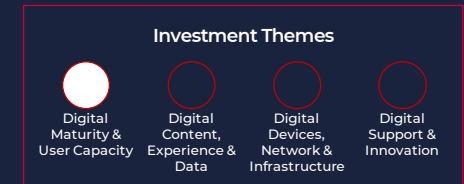
The digital maturity framework and process will be repeatable and reliable, easy to deploy and complete, provide data aggregation at the school, district and state level, and facilitate benchmarking against peer schools.

The framework will include the development of school archetypes to assist in benchmarking, and identify and promote patterns of digital capability that make sense for schools of that archetype.

This will assist, in understanding the digital advancement journey other like-schools have undertaken, including through case studies.

School digital maturity data will not be openly published but will be used by the Department to direct additional support.

- #1.1 Design and develop the digital maturity framework for evaluation across the domains of school management, teaching & learning and student administration. The framework should include guidance, roll out frequency and be integrated with the Schools Excellence Framework (SEF). It will include the school archetypes that can form benchmarking and digital capability pattern deployment..
- #1.2 Build, test and deploy a digital maturity evaluation tool that captures digital maturity across people, process and technology. The tool will baseline digital literacy and will be aggregated to the school level. The tool will be co-designed with schools for ease-of-use and practicality.
- #1.3 Develop content repository in suitable CMS for evaluation framework content, help, tools, archetypes, case studies, and digital capability patterns, including professional development.
- #1.4 Collate, analyse and report on the digital maturity assessment data on an ongoing basis, including benchmarking against schools of similar demographics, geography and size etc.



# 2. Enable schools to access digital resources

Integration of digital maturity with the Schools Excellence Framework will assist school planning, capabilities selection, deployment and measurement.

Enabling schools to plan and deploy these new capabilities will require the development of an accessible service catalogue that will eventually evolve into a Digital Marketplace of products and capabilities. These will need to conform to relevant standards of security, interoperability and data. An enhanced catalogue will include user ratings and reviews to assist product and service selection.

Schools will be supported in identifying and capturing measures of success, and in the change activities necessary to support school leadership to understand and adopt the capabilities.

## Enabling school concepts from the SDS school engagement process\*

### Recharge Stations (Highest Potential)

Dedicated, digitally enabled spaces for students and staff, providing access to sleeping pods, counsellors, mindfulness apps, wellbeing info and wellness sessions

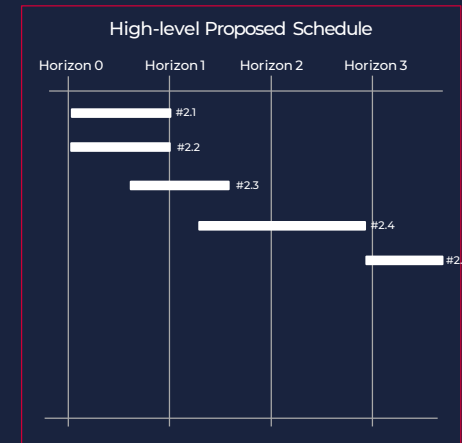
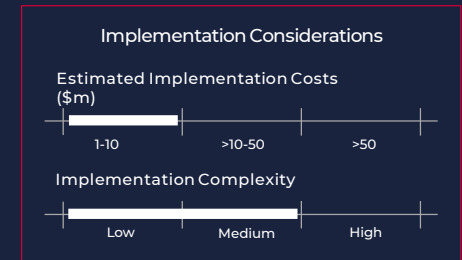
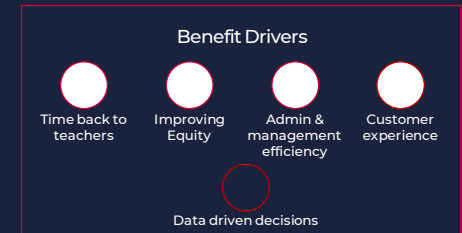
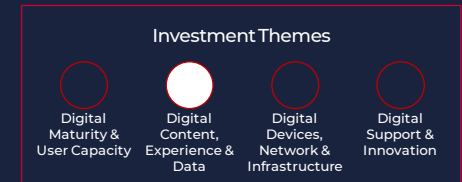
### Follow the leader (Potential)

A global tool with the ability to take a self-assessment survey on leadership skills, highlighting areas for development and access to up-skilling classes

### SmartMarket (Potential)

Approved online marketplace where businesses like Google, Facebook, SAP and Microsoft offered schools their education-focused products, solutions, services and technology.

- #2.1 Identify digital assets centrally as the basis of the initial digital service catalogue. Design criteria for inclusion in the catalogue including application fitness for purpose, interoperability, data standards and security, accessibility requirements, digital transaction support etc. Professional development will be identified or built for all digital assets.
- #2.2 Review of application and services in use by the school network and update service catalogue accordingly against the inclusion criteria. Develop and provide a structured list of existing offerings to schools.
- #2.3 Develop and deploy support and training process and procedures for the enhanced service catalogue.
- #2.4 Optimise and enhance the service catalogue into a digital catalogue. Improving the user experience through simplified installation, procurement, payment and implementation processes. Enable enhanced user features such as rating products and services.
- #2.5 Evolve digital catalogue into a digital marketplace creating an ecosystem where schools, corporate, third party vendors and partners can integrate and innovate to provide enhanced benefit to the NSW school network.



Candidate for Horizon 0 pilot

\* For further detail, please refer DoE Digital Transformation Research Report

# 3. Support improved teaching and learning

This strategic focus area is designed to improve the ability of teachers to incorporate digital technology into learning experiences. It has the following features: enablement of digital curriculum and assessment, deployment in the learning environment, personalised learning support, and making digital content creation and lesson planning easier.

It includes the longer term vision of establishing the ability of personalising learning on an effective scale.

## Digital teaching and learning concepts from SDS school engagement process\*

**Cyber Safe (Highest Potential)**

A training computer game for students to work through different levels where you have to deal with things like cyber-bullying, using Facebook and Instagram properly, and common scams and viruses.

**iTeach (Highest Potential)**

A digital platform that allows teachers to source broad suite of lesson plans aligned to the curriculum and select from "life-skill electives" that they might choose in consultation with their class

**Homework Masterclass (Potential)**

A YouTube channel of video tutorials aimed at guiding parents and students. Posted by teachers and leading education experts. Linked to the syllabus.

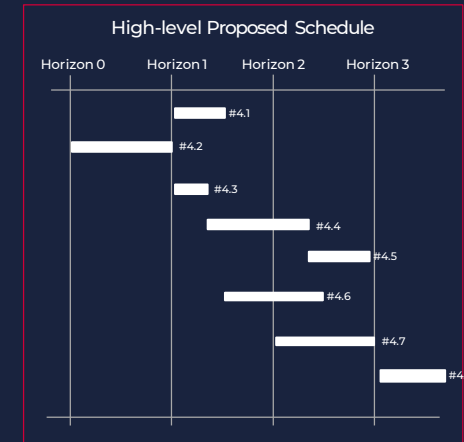
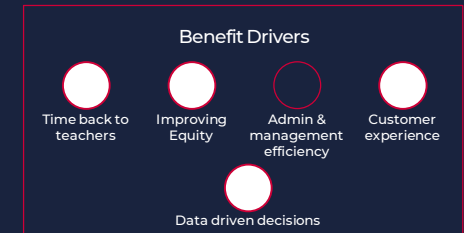
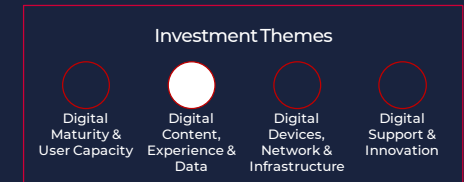
**Passport to the Future (Potential if Optimised)**

A digital platform that provided core competency curriculum (i.e. literacy and numeracy) but, would also give students greater scope to choose a series of elective subjects to complement the essential curriculum components.

**EduAdvisor (Potential if Optimised)**

Online platform gives you a voice in how your learning experiences. Provide live feedback to teachers on lessons to improve lessons and find your areas of interest in future classes.

- #3.1 Develop a digital teaching and learning strategy to define use cases for digital learning delivery, including the support of flexible enrolment and learning, additional learning needs and to determine age-appropriate integration into teaching and learning.
- #3.2 Review of existing digital curriculum for content and meta-data adequacy, content lifecycle management (including roles and responsibilities), and adequacy of content creation, curation and storage tools.
- #3.3 Review existing and prospective education-focussed Learning Management Systems (LMS) for adequacy against broad requirements such as scalability, interoperability and integration with SA platforms, digital content integration, lesson and learning pathway creation, assessment integration, and personalisation capabilities. Make suitable products available through the Service Catalogue
- #3.4 Procure LMS licences and/or products as necessary to scale LMS implementation across schools. Support implementation with necessary people change activities.
- #3.5 Implement integration of LMS to parent & carer, student and teacher portals. Refer to collaboration and communication #6 for portal initiative
- #3.6 Define teaching and learning methods that include digital lesson planning approaches, tracking against learning goals, content modularity, search and content tagging, and incorporating learner feedback and learning insights. Define learning delivery methods that include immersion, gamification and engagement, delivery channels and devices
- #3.7 Review of learning software and platforms, formative assessment tools, education gamification tools, and develop an approach for continual innovation and adoption of learning tools into a digital teaching and learning service catalogue
- #3.8 Implement personalised and flexible learning with advanced analytics, digital formative and summative assessment tools and LMS integration. This will require integration assessment data, POCs, recommendation engines, insights engines and portals



Candidate for Horizon 0 pilot

\* For further detail, please refer DoE Digital Transformation Research Report

# 4. Improve student administration and school management

Student and school administration processes are improved, including by automation of common transaction activities.

Digital assistants, AI and chatbot servicing of common service channels frees capacity and reduces cost to service. Includes digitisation of paper processes; greater integration of systems, improved user interfaces; and workflow support for tasks

## Student admin and school management concepts from SDS school engagement process \*

**Air Teacher (Highest Potential)**

An on-demand directory of casual teaching staff to enable full time staff to take leave and for schools to offer specialised teaching to students.

**Online Self – Service Desk (Highest Potential)**

A step change in the digitisation of highly repetitive administrative tasks, aimed at improving the experience for all involved. Through an online parent portal of automated forms that are pre-populated

**Digital Asset Tracker (Highest Potential)**

Enables the end-to-end lifecycle maintenance, inventory and replenishment of school resources, saving time and money for schools of the future.

**School Pocket Assistant (Potential)**

A virtual assistant that would provide notifications, alarms, reminders and timetabling features to help stay on top of key information. Voice-activated control would provide answers to questions

**Hawkeye (Potential if Optimised)**

A cyber security system fed data on up-to-the-minute digital threats, Artificial intelligence would identify threats and automatically implementing best-in-class solutions. An intelligent guardian, looking out for the safety and security of students

#4.1 Define the requirements for paperless student and school administration processes to identify the manual processes for remediation. This will also require a process review across higher volume/higher cost process areas

#4.2 Review, assess and extend existing applications for their ability to meet the defined requirements - Consider whether the Digital Enrolment initiative or #1.1 may meet some of these objectives

#4.3 Investigate, procure and implement additional applications to meet the paperless process requirements identified in #5.1. Consider automation tools and technology for high volume, repetitive transactions, and ensure usability through human-centred design practices

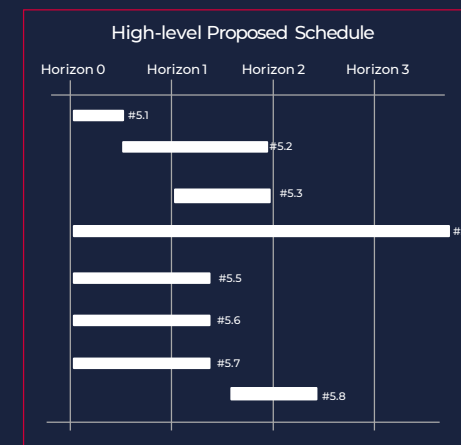
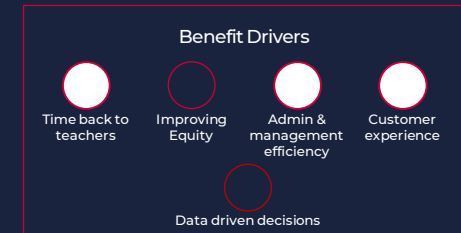
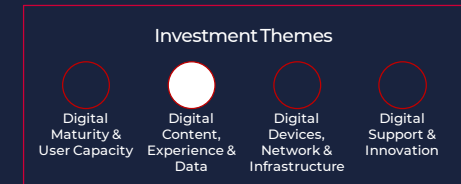
#4.4 Review existing enterprise resource planning tool functionality for ability to address existing school administration processes, including functional ability to enable self-service and automation of operational processes where feasible

#4.5 Design and deploy a digital contingent workforce management solution for schools

#4.6 Design and deploy a digital solution for schools that allows the community utilisation of school assets

#4.7 Deploy a digital asset management solution for use by schools

#4.8 Design and deploy a self-service capability for external user portals



Candidate for Horizon 0 pilot

\* For further detail, please refer DoE Digital Transformation Research Report

# 5. Enhance our data, analytics and reporting capabilities

This area involves enhancing the usability, traceability and integrated nature of data and analytics across the department to deliver an optimised environment for learning and teaching and school management solutions that improve experiences and student performance.

The key uplifts will be across integrated information management, a single view of student, pedagogical insights and a self service ability. Data and analytics across the department will be easily accessible yet secured, high quality, trustworthy, comprehensive and a strategic enabler of learning and teaching outcomes.

## Data and analytics concepts from SDS school engagement process \*

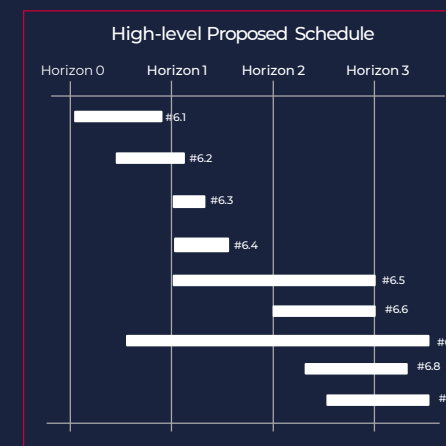
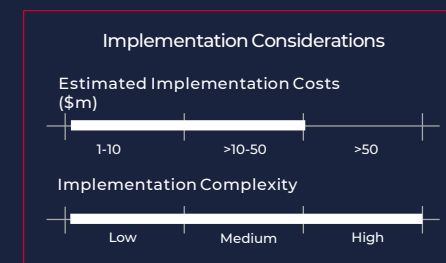
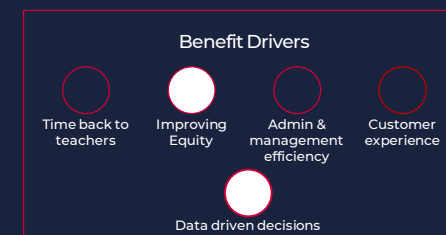
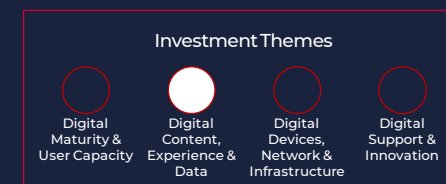
### Data-Driven Funding (Potential)

A smart analytics tool that pulls data from multiple sources to capture relevant funding metrics. Delivers more equitable funding by distributing the budget according to student needs over student population

### Life Tracker (Potential if Optimised)

A central database that aggregates student information across government agencies and saves parents time. When students change schools, visibility is not lost. Data kept in a safe place.

- #5.1 Development of a department wide data strategy. This strategy will assess the current state, and provide a roadmap to an improved capability within the department for Information Management, Analytics, Business Intelligence, Data Warehousing, Golden Record Management, and Integration.
- #5.2 Identify, test and provision an upgraded technology environment to capture, store, govern, share and analyse the department's data assets. Consolidate / coordinate existing capabilities into an integrated system
- #5.3 Creation of a Data & Analytics Centre of Excellence, which provides a highly skilled team that is responsible for capture, storage, governance, aggregation, analysis of the data.
- #5.4 Review and extend existing golden record management capabilities to match student records.
- #5.5 Extension of existing data stores to capture data from systems and applications in use by students and schools
- #5.6 Develop and deploy a data insights and recommendations capability and associated tooling to enable automated and personalised reporting and analytics for teaching and learning and the wellbeing of students.
- #5.7 Enhance the ability of staff to understand information analysis and benefit for decision making
- #5.8 Enhance operational dashboards with insights and recommendations vs data.
- #5.9 Extension of the CoE to investigate and implement advanced and predictive analytical capabilities, test and pilot future technology (e.g. artificial intelligence, big data, cognitive computing) and provide support and training across the department



# 6. Drive collaboration and communication

This areas involves enabling a greater focus on the sharing of knowledge and expertise. It entails the creation of communities of professional practice, supported by collaboration tools that facilitate the exchange of information and ideas.

Encompasses the deployment of collaboration tools for students and teachers, giving parents & carers online access to relevant school and student information and communications, and giving students access to school and subject information.

## Collaboration and communication concepts from SDS school engagement process\*

**Message Me-Mobile Consent App (Highest Potential)**

An app designed to cut down on the administrative burden of requesting parental consents and student information. Request and provide consent. Permissions trigger notifications for payment

**The Hive (Potential)**

An online platform that gives you access to interactive lessons and resources and enables you to collaboratively work with students from any school

**Studio Us (Potential)**

An online meeting place that allows teachers to upload content and share resources from around the world. Teachers can search for resources using subject tags, and review / rate

**Oracle (Potential if Optimised)**

One-stop-shop parental digital portal with relevant information, in an easy-to-navigate way. Everything from upcoming events to current coursework and the availability of teachers

**Student Progress Checklist (Potential if Optimised)**

An app that displays a checklist of curriculum outcomes and syllabus competencies. Teachers to tick these off in class. The app generates a dashboard for teachers and parents to see

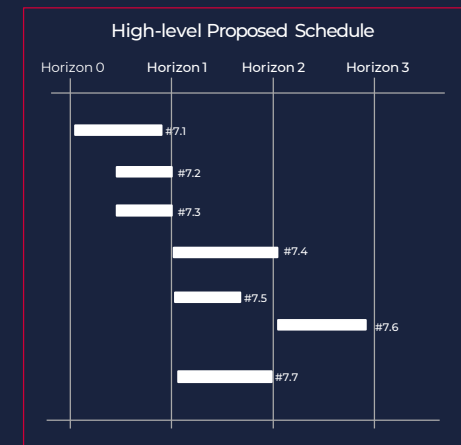
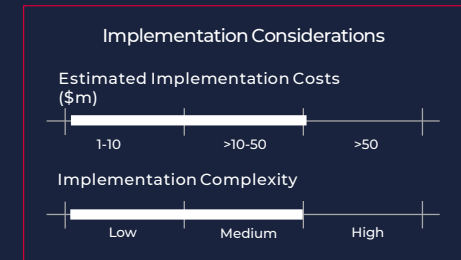
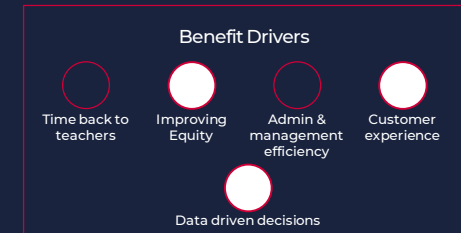
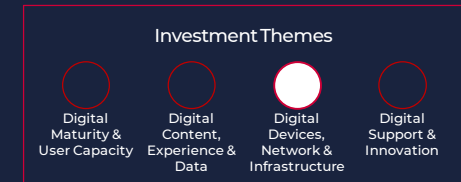
**ePortfolio (Potential if Optimised)**

A digital portfolio of your work throughout the year that you manage, your teachers review and that can be easily shared with your parents.

**School Tasker (Potential if Optimised)**

An app that brings together a school community for the mutual benefit of all involved, by putting staff in touch with suitable volunteers and tradespeople keen to be more involved.

- #6.1 Creation of a collaboration and communication strategy covering communities of professional practice, student and teacher collaboration tools, external communication including data privacy and security
- #6.2 Review of portal and communication capabilities by customer type to identify areas of improvement
- #6.3 Review existing collaboration tools in use in schools to identify areas of improvement. Add existing to service catalogue
- #6.4 Design and implement an identity and access management solution for parents and carers
- #6.5 Design and implement the immediate improvements to portal capabilities in #6.2 across each of the customer type including mobile consent management for parents & carers
- #6.6 Optimise the feature set of the portals to enable learning journey visibility and insights and predictive analytics through integrations with teaching and learning solutions and available data - refer to the long term improvement areas identified in #7.2
- #6.7 Design and implement the improvements to collaboration tools in #6.3 including the required training and support



Candidate for Horizon 0 pilot

\* For further detail, please refer DoE Digital Transformation Research Report

# 7. Strengthen equity foundations

This area involves key foundational capabilities. Firstly, ensuring connectivity and adequate bandwidth capacity for each relevant learning space.

Secondly, defining an equitable device ratio appropriate to the age of students and to the extent digital teaching and learning is enabled or planned in the school.

Thirdly, a 1-to-1 device ratio for teachers to support more effective teaching and learning, provided the requisite capabilities are enabled at the school level.

Finally, supporting an uplift in training, learning and professional development to increase digital literacy; from helping teachers embed digital teaching in the classroom, to staff adopting new ways of working, and for school leaders to adopt new tools, manage more efficiently, and have more time to spend with teachers.

Digital and equity foundation concepts from SDS school engagement process\*

**1-to-1 Laptops for All (Highest Potential)**

A program that provides every student with a standard laptop loaded with the resources to support future-focused learning; and all teachers with the same laptop and resources

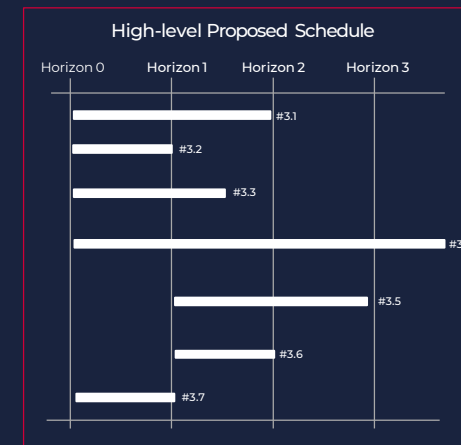
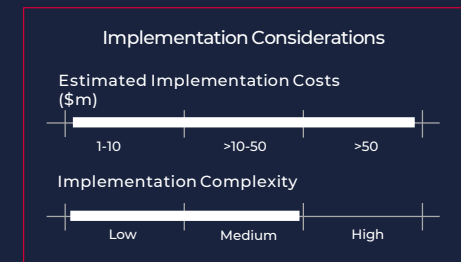
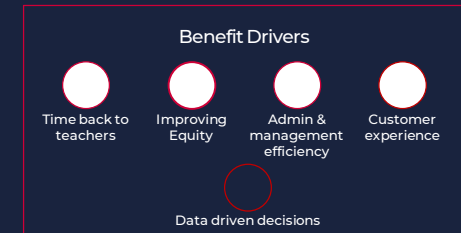
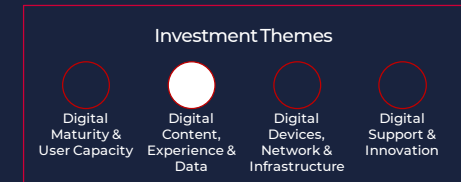
**Digital Study Tours (Potential)**

Paid sabbaticals as part of teacher employment contracts to guarantee a certain amount of real world experience and relevant professional training

**Digital Flight Simulator (Potential if Optimised)**

A learning experience that delivers digital training modules aimed at giving digital and tech skills. A VR simulator would show real life scenarios on how to use digital technology

- #7.1 Funding and implementation of Connecting Metro Schools (CMS) initiative
- #7.2 Develop an equitable device ratio plan for students based on age and agreed factors, and tied to commensurate digital capabilities being enabled in schools
- #7.3 Design and implement fit-for-purpose network monitoring capabilities including network capacity, device access, network performance monitoring and diagnostics etc – Consider whether Network Operations Centre initiative can be expanded to meet this objective.
- #7.4 Design a minimum viable digital classroom (based on relevant learning space categories) that includes consideration of VC/collaboration devices, educational and participatory technologies. Test, and implement tools and technologies. Consider whether Foundations.T4L and Digital Classroom initiatives can meet these objectives.
- #7.5 Review existing device provision strategy and policies, and develop business case, funding, provisioning, infrastructure and fitout requirements, and ongoing support for transition towards higher device ratios for students based on agreed ratio allocations
- #7.6 Implement Laptops for Teachers initiative. To include review of BYOD strategy and policies, and consider funding, provisioning and ongoing support for transition towards 1-1 device ratios for teachers.
- #7.7 Develop and deploy digital literacy programs for teachers, administration and support staff, and school leadership. Consider existing PD content and its adequacy. Consider outcomes of Digital Maturity Assessment initiative #1.3 in program design.



Candidate for Horizon 0 pilot

\* For further detail, please refer DoE Digital Transformation Research Report



# 8. Re-orient the service model to support teaching & learning

This strategic focus area is centred on re-oriented service model that to enhanced support to schools to effectively deploy, implement and adopt digital teaching, learning and operations.

It defines the implements the role of the Digital Liaison Officer who works with the DEL, Field Support and other front-line teams to lead the digital change agenda with the school leadership and staff.

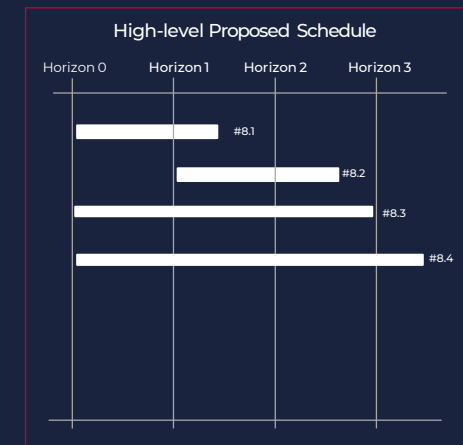
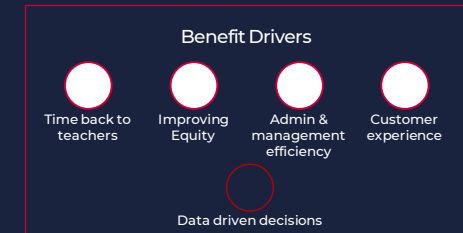
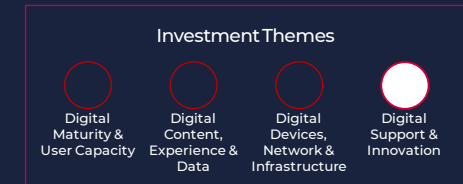
It brings digital practice into the school and works alongside teachers to embed it in teaching and learning. It embodies the principles of putting schools at the centre.

## Re-orienting service model concepts from SDS school engagement process\*

### 24/7 Tech Support (Potential)

24/7 real-time support with the most advanced predictive diagnostic and troubleshooting tools available to schools, including chat bots to troubleshoot through a complication

- #8.1 Perform a detailed review of the centre functions that provide digital and technology services to schools. Define the Digital Liaison officer role in conjunction with the DEL network and ITD to design an integrated school-support model including digital.
- #8.2 Implement and operationalise the initiatives identified from the #8.1 strategy. Initial revised model to be trialed in schools.
- #8.3 Fund the identification and scaling of areas of improvement in new support model - refer to the ITD Operational Support Model Review Project within the Foundation.T4L program
- #8.4 Fund the establishment of a systematic and statewide professional development and support service for all schools, scaling the Digital Liaison Officer initiative from the STEMShare program - refer to the Beyond.T4L program



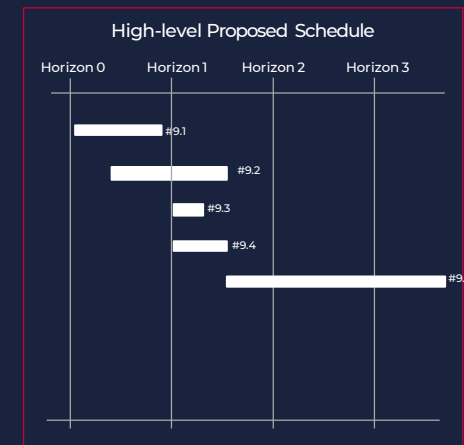
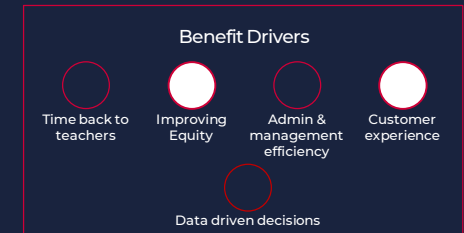
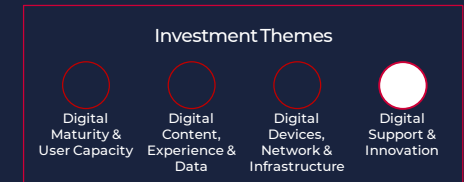
# 9. Scale continuous innovation at the edge

Ensuring the right governance, principles, practices and culture exists to support continual innovation at the edge and to the edge.

Schools will be able to access the resources they need to innovative within the learning space.

As new effective teaching and learning practices are identified, these can in turn be codified into assets to be made available across the school network.

- #9.1 Develop an innovation framework that will encourage innovation practices at the edge. The framework will cover areas such as training & learning, accelerators & tooling for ideation, prototyping and testing and recognition
- #9.2 Establish a central innovation support function that provides support into the schools on their innovation initiatives. This enables schools to deliver ideas rapidly with the support from the centre – Consider the application and extension of the Catalyst Lab Innovation Program Scheme
- #9.3 Create a dedicated innovation fund for schools
- #9.4 Develop a rapid application process for ideas submitted for funding and a monitoring and assessment process of the outcomes and their suitability for scaling across the network
- #9.5 Develop and deploy an education program for schools that provides the training in market leading innovation practices (design thinking, human centered design, rapid prototyping, agile methodologies etc).



Section 10

# Immediate Next Steps

# We must take immediate steps to continue momentum and set up for Horizon 1

There are a number of next steps that require immediate attention in order to continue at pace with the digital strategy execution.

The steps range from executive endorsement and funding requirements to identifying the business owners of initiatives to commence the Horizon 0 activities.

An integral component of the next steps is implementing the governance (#3) for the management of strategy execution.

## 1. Endorsement from Executive Leadership and Central Government

The Schools Digital Strategy requires endorsement and support from the Secretary, the DoE Executive Committee and the required external agencies. Nominate accountable executive for execution.

## 2. Commence Horizon 0 activities

Initial H0 : compile initial digital service catalogue and prepare for school pilots, complete the capability model and digital maturity framework, complete process review and data gathering to prepare for Gate 2, define the DLO-based service model and select initial schools for trial, plan remaining H0 initiatives

## 3. Pilot school-derived concepts

Continue the SDS school engagement to date by refining the top priorities (i.e. concepts that were noted as highest potential) identified by schools into digital prototypes. Trial these in schools, include further feedback to determine school archetypes and finalise implementation.

See next page.

## 4. Align operational portfolio

Review Operational FY20/21 plans in light of the SDS to determine intersection of inflight and proposed projects (beyond those identified in this SDS) that contribute to the achievement of the schools digital strategy. Areas to note could cover; the impact of equity changes to cyber security, personalisation of data and privacy requirements etc.

## 5. Confirm business owners and establish program delivery structure

Confirm business owners for each strategic focus area and agree appropriate roles, accountabilities and consultation points. Determine delivery teams to support.

## 6. Mobilise the governance to execute the strategy

Finalise the execution and governance team structures, re-orient the SDS working group and project team.

# Start small, pilot and scale, fail fast and learn quickly

Across each of the Strategic Focus Areas, there are opportunities to pilot initiatives at a small scale.

Using an agile delivery approach will allow the Department to test concepts more rapidly, gather feedback and data and focus on successes.

It will also provide greater insights into the cost of scaling, and help identify any potential implementation risks and complexities.

These insights will assist in the development of subsequent business cases and maximise the likelihood of informed investment and success.

Suggested possible areas to pilot are detailed here.

- 1 Enable digital maturity assessment and benchmarking**

#1.2 – Co-design the digital maturity evaluation tool with a small number of schools and test it against those schools and extend to different school contexts.
- 2 Enable schools to access digital resources**

#2.1 – Pilot the service catalogue against a small number of schools. Use co-design approaches to maximise usability and utility.
- 3 Support improved teaching and learning**

#3.7 – Pilot formative assessment tools across a range of digitally enabled schools. Harness uses of digital learning and teaching and trial in different school contexts. Deploy remote learning (e.g. Aurora) into rural schools.
- 4 Improve student administration and school management**

#4.2, #4.3 – Pilot paperless processes in a small number of schools. Select the best PD, training tools and processes for broader adoption. Test automation of timesheets, attendance, parent interactions.
- 5 Enhance our data, analytics and reporting capabilities**

#5.6 – Optimise the insights provided to schools in school management and student administration working with school leadership.
- 6 Drive collaboration and communication**

#6.1 – Create communities of professional practice and invite pilot participation. Optimise experiences of interacting with the school and test for feedback, usability and reduction in teacher / parent time.
- 7 Strengthen equity foundations**

#7.4 – Pilot several versions of a digital learning environment using differing sets of technologies in different contextual settings.
- 8 Re-orient the service model to support teaching & learning**

#8.2 – Trial digital support officer concept in a select number of schools. Refine roles & responsibilities.
- 9 Scale continuous innovation at the edge**

#9.2 – Develop and trial the central innovation support function against key performance metrics, and refine the model accordingly.

# Schools Digital Strategy

END