



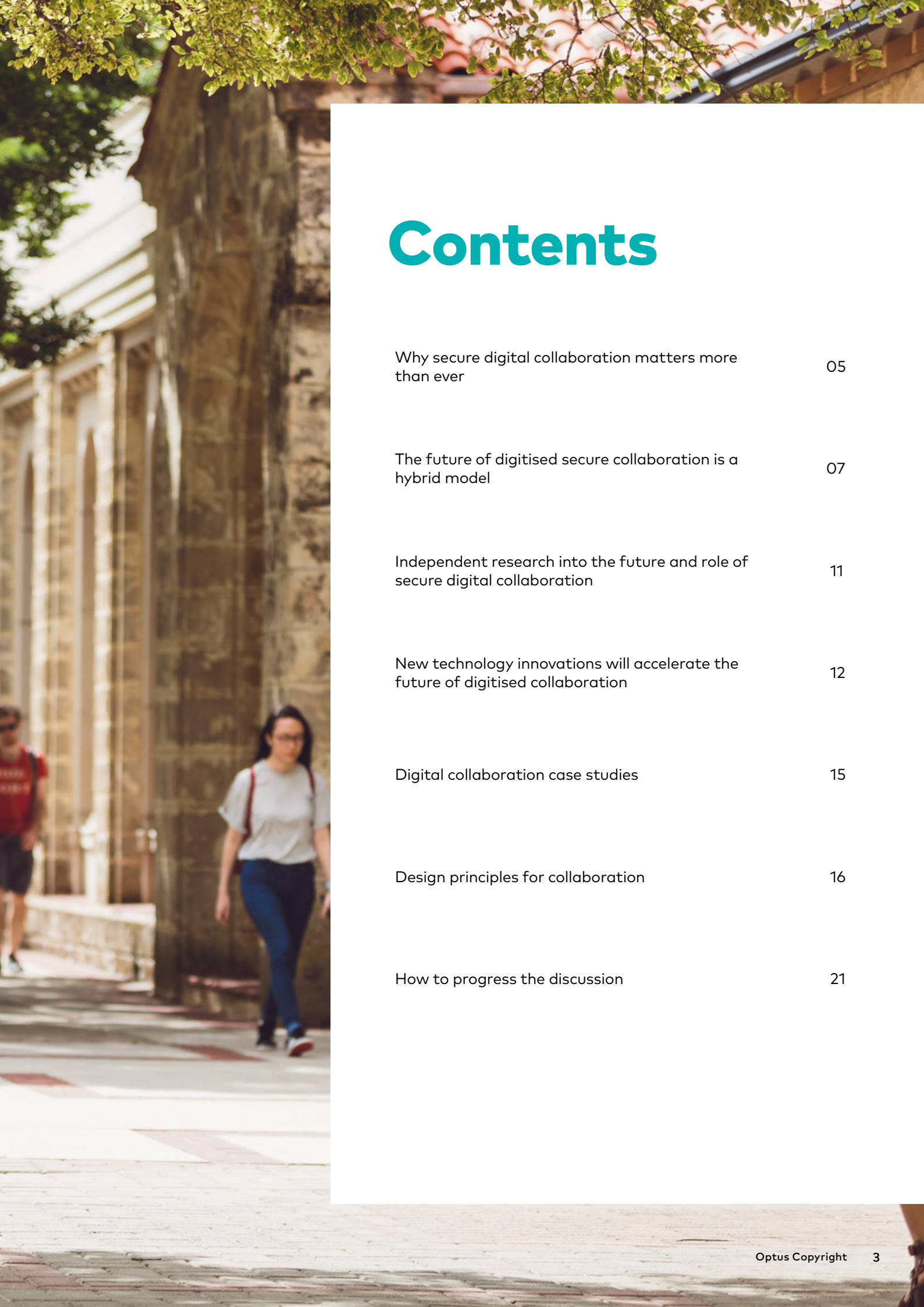
How digital collaboration is shaping the future of Healthcare and Education

Yes

OPTUS







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Technology and telecommunications leaders, Cisco and Optus, have partnered with Australian universities, La Trobe University and Curtin University, to establish the National Industry Innovation Network (NIIN).

The new Network serves as an important move for industry and

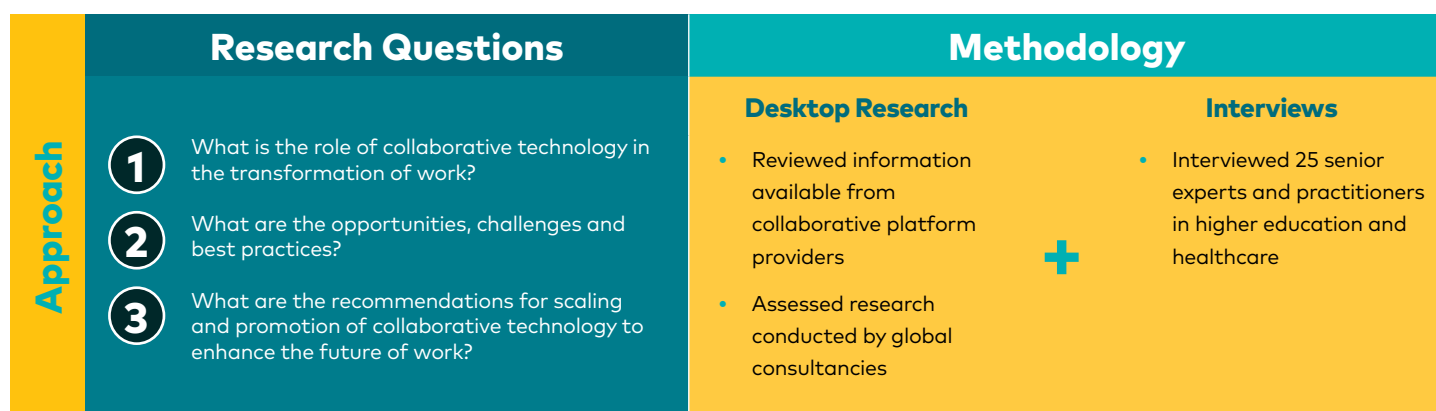
academia to collaborate for the acceleration of Australia's digital transformation and for long-term digital economic resilience.

NIIN's first research initiative is a whitepaper on the potential role of digital collaboration in the future of work. The shift towards adopting collaborative technology

was accelerated by COVID-19, as many organisations put in place the tools needed to enable remote collaboration.

NIIN's research aims to provide clarity on what's next and how to build on the digital collaboration foundation many organisations have developed.

Figure 1: NIIN whitepaper on the future of work



This companion document synthesises major themes from NIIN's research and provides a roadmap for Chief Information Officers (CIOs) in government, education and healthcare to build their organisations' digital collaboration capability.

Why secure digital collaboration matters more than ever

COVID-19 has impacted how we work, learn and live

COVID-19 has accelerated momentum towards digitisation. Nearly every sector has seen major changes to the way people work, learn, receive services and socialise. The fundamental changes

experienced during COVID-19 will likely become the new normal.

Three areas of the public sector – central government, education and health – have been profoundly impacted by the global pandemic. Central government and acute healthcare have been at the frontline of the response to COVID-19, and education has been reimagined.

To reinforce this point, 79% of Australian higher and vocational education leaders surveyed say that COVID-19 will be looked back on as the tipping point for the future of learning and campus design.¹

Figure 2 shows major changes in government, education and health that are likely to persist.

Figure 2: How sectors responded to COVID-19

Public Sector	Education	Health
 Conducting government securely and virtually (e.g. Virtual parliaments)	 Accelerating the shift to blended learning models	 Creating more dynamic health spaces
 Transitioning most staff to remote working – perhaps for good	 Rapidly upskilling staff in the use of digital	 Enabling telehealth for ambulatory and inpatient settings
 Moving from analogue to digital and immersive communications	 Increasing reliance on the industry partners to adjust to the new normal	 Safeguarding the workforce and mitigating staff and equipment shortages
 Adapting organisational process (e.g. electronic briefings and sign-offs)	 Developing new channels to engage – and share information – with students	 Reimagining physical facility workflow

Digital collaboration has been elevated to help the public sector respond to COVID-19

Global consumption of data has been growing at 24% CAGR since 2016² and, during COVID-19, spiked by up to 80% with the rapid shift to remote working and learning.

Demands on the internet have been different to the usual at-home use, with more upload data needed – driven by video consumption.³

This is not a temporary phenomenon. A study by the University of Otago found 89% of those working from home during the global pandemic would like to continue doing so, at least some of the time.⁴

1 Vector Consulting. The Tipping Point for Digitisation of Education Campuses. October 2020.

2 VNI Complete Forecasts Highlight – Global 2021 Forecast Highlights. (2016). Cisco.

https://www.cisco.com/c/dam/m/en_us/solutions/service-provider/vni-forecast-highlights/pdf/Global_2021_Forecast_Highlights.pdf

3 <https://www.abc.net.au/news/2020-04-01/coronavirus-internet-speeds-covid19-affects-data-downloads/12107334>

4 <https://www.stuff.co.nz/business/300023305/coronavirus-most-want-to-continue-working-from-home-after-covid19-lockdown>

Figure 3: growth in remote working⁵



Institutions are focused on what's next and how to improve the collaboration experience

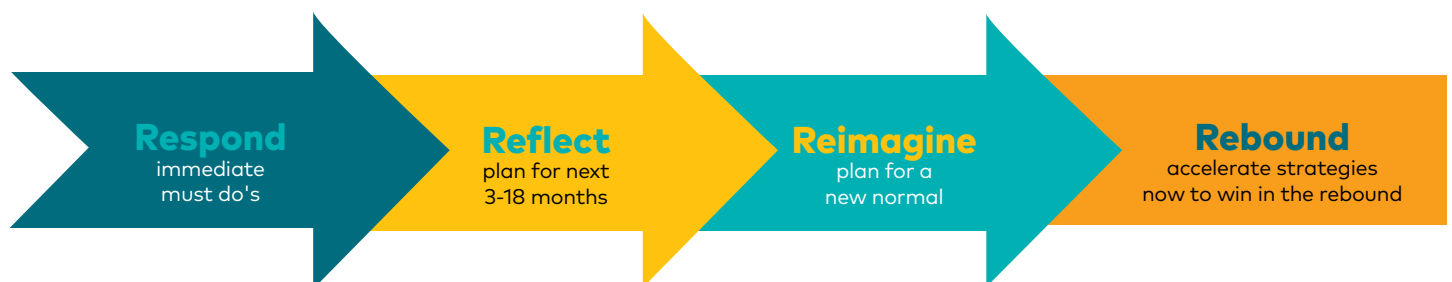
Organisations are now moving from a response to recovery mindset, focusing on what's next and how to prepare. Many organisations have

put in place 'quick fixes' to enable remote collaboration but have yet to grapple with what the future holds beyond the current response.

One thing is clear: the role of digital has been elevated and a gulf is emerging between those that do and don't leverage digital to drive more and better collaboration.

Now is the time to reflect on learnings from the COVID-19 response and begin reimagining what the future of digitised collaboration may look like.

Figure 4: Transitioning from Response to Recovery



The future of digitised secure collaboration is a hybrid model

The rapid development of digital collaboration is changing communication, ways of working and employee engagement.

The NIIN report establishes that digitised collaboration will likely become a vital tool in helping organisations to improve cross-department teaming and improve work agility. This will allow organisations to rapidly shift the location of work according to skill availability and strengthening engagement connection between employees, customers and stakeholders.

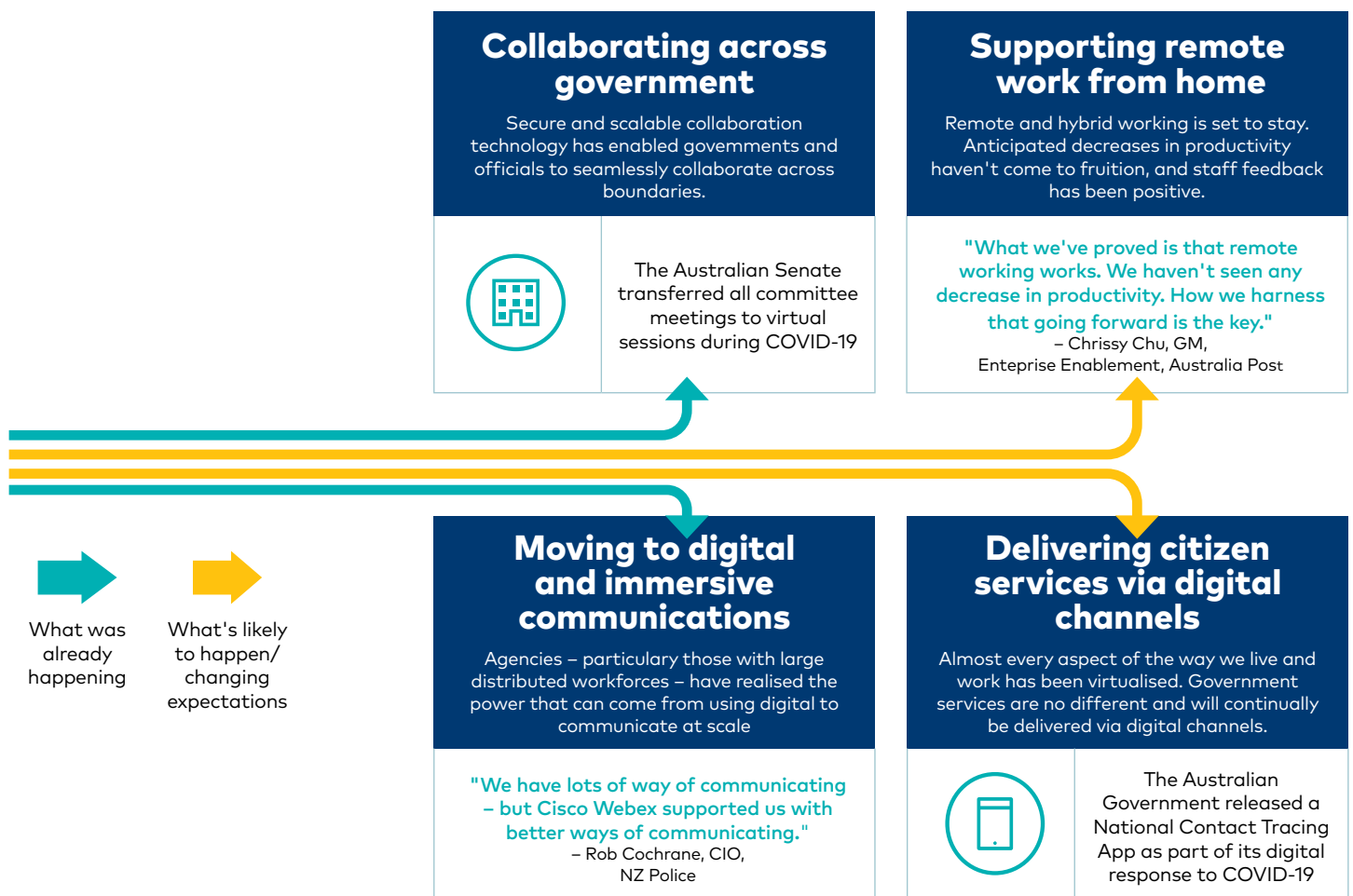
Within government, education and healthcare, digitised collaboration may also enable the development of new services and the transformation of operating models.

Digitised collaboration in government – secure remote working

In addition to enabling staff to work from home, digital collaboration tools will enable the digitisation of services and more joined up, cross-agency collaboration. This has the

potential to break down traditional organisational and geographical boundaries in the public sector and enable governments to respond to issues faster and engage more closely with citizens where they are located.

Figure 5: Collaboration in Government





Digital collaboration in education – secure blended learning

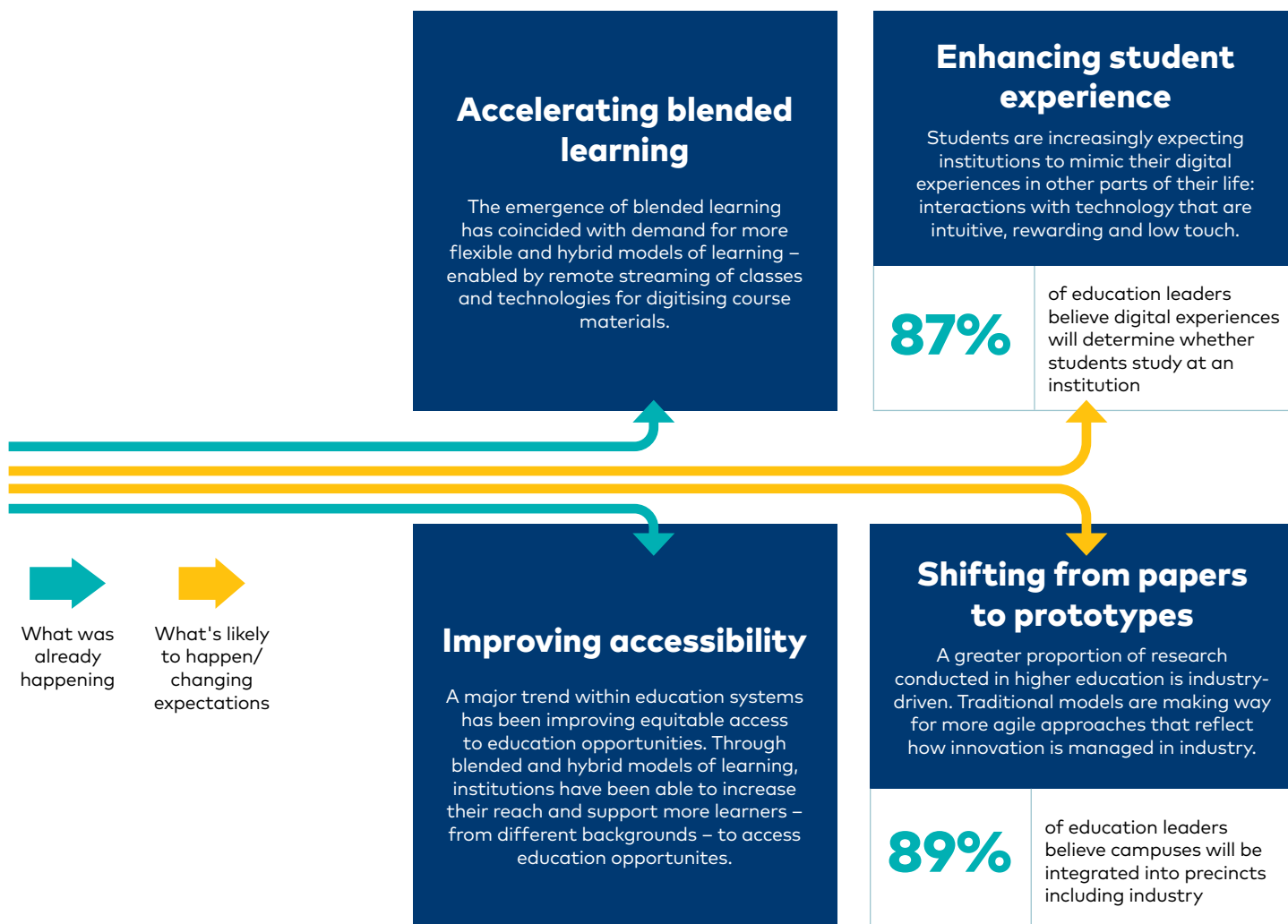
More diverse paths for accessing education across working life is a common expectation of future education. Collaboration platforms will need to support interaction with individuals who have more diverse

learning needs and preferences than ever before.

Integrating and building in artificial intelligence and machine learning to help people along that path, means that collaborative technology will start to become more embedded into the strategies to improve the future of learning outcomes.

At the same time, as universities strive to connect more closely with external partners and provide more experience-based learning, collaborative platforms will help education providers span institutional boundaries and connect collaborating partners.

Figure 6: Collaboration in education





Digitised collaboration in health – virtualised care

Collaborative platforms can further improve the proficiency of healthcare decision-making.

Virtual care and collaborative technology not only improve team collaboration efficiency but also enables a new model of healthcare, where data and treatment are collected and delivered to where the patient is. Collaborative platforms

also make visitations to hospitals and social connections easier, which are important functions in the healthcare system.

Figure 7: Collaboration in health

Operationalising telehealth

Advancements in mobile technology and bandwidth have been enabling health services to be delivered remotely. Among other services, it is now possible to access provider consults and group therapy sessions by video and on-the-go.

Creating dynamic hospitals

Health infrastructure is becoming more dynamic. Existing health spaces are being made dynamic; non-health spaces are being turned into health spaces, and healthcare is being mobilised.

"...the species that survives is the one that is able best to adapt and adjust to the changing environment"
– Leon Megginson



What was already happening



What's likely to happen/ changing expectations

Putting patients at the centre of care

While healthcare systems are trying to proactively support the most vulnerable members of society, there is a growing expectation that institutions connect to patients on a personal level, and the demand for care to be delivered in non-clinical settings such as homes is heightened.

Virtualising care

Traditionally, care has been provided when patients present with a problem. There is now a growing expectation that healthcare systems will shift to preventative modes of healthcare, enabled by new technologies that virtualise healthcare and provide early diagnosis and treatment.



Independent research into the future and role of secure digital collaboration

NIIN'S whitepaper reinforces the view that secure collaboration technology will increasingly drive transformation within education and healthcare.

Figure 8: NIIN's findings about the role of digital collaboration in education and healthcare

 Education	 Healthcare
Collaboration platforms will enable a future where learning is more accessible and the walls around universities are more porous.	Collaboration platforms will enable a future where healthcare services are more customised and there is greater scope for patient-provider interaction.
"I think the future of education is more going to be like 'work'... We will simulate a real hands-on product development and mimicking a real industry, using collaborative platforms to be out there to do workshops and labs."	"We're being encouraged to think about configuration of spaces, technology platforms and modes of interaction that can be specifically reconfigured to meet the needs of people with our particular kinds of health needs on an individual level."
"Collaboration tools point to a future where the walls around the university are much more porous... deep collaboration starts to blur the lines of organisational boundaries."	"For young people in some cases one-on-one care is fine, but if you have chronic diseases, serious conditions or aged care, then you usually have a team of people looking after you. Collaborative technologies and virtual care will be able to change that model."

As the diffusion of collaboration technology continues to accelerate – and collaboration technology becomes more immersive, intuitive and secure – a number of broad impacts with potential to transform organisations will be realised.

Figure 9: NIIN's findings about the role of digital collaboration in education and healthcare



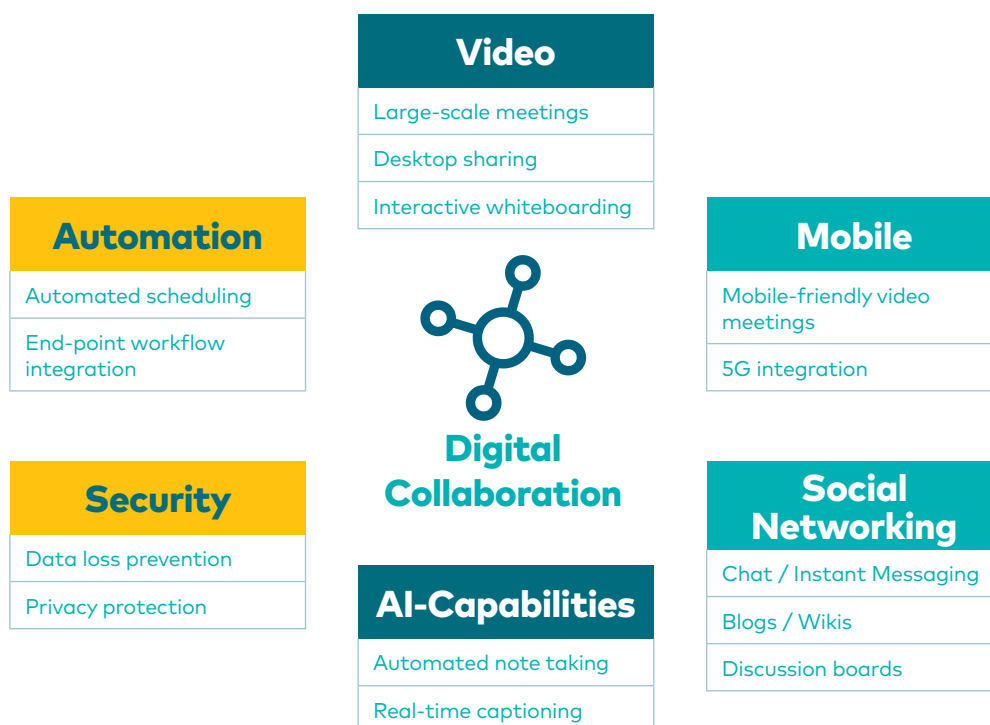
New technology innovations will accelerate the future of digitised collaboration

New technology innovations will accelerate the future of digitised collaboration

Advancements in collaboration technology are enabling benefits beyond making team interaction possible across time and space. Collaboration technology is expanding to include features

as diverse as social networking, document collaboration, real-time transcription and captioning, and automation – all of which support more productive collaboration and teamwork.

Figure 10: Examples of advancement in digital collaboration technology



There is also growing expectation for leading tools, such as Cisco Webex to be interoperable and support organisations' own workflow.

Many organisations now run multiple platforms for digital collaboration to provide users with choice. Interoperability between secure enterprise platforms, such as Webex has been a major focus.

Deep Dive: Cisco Webex

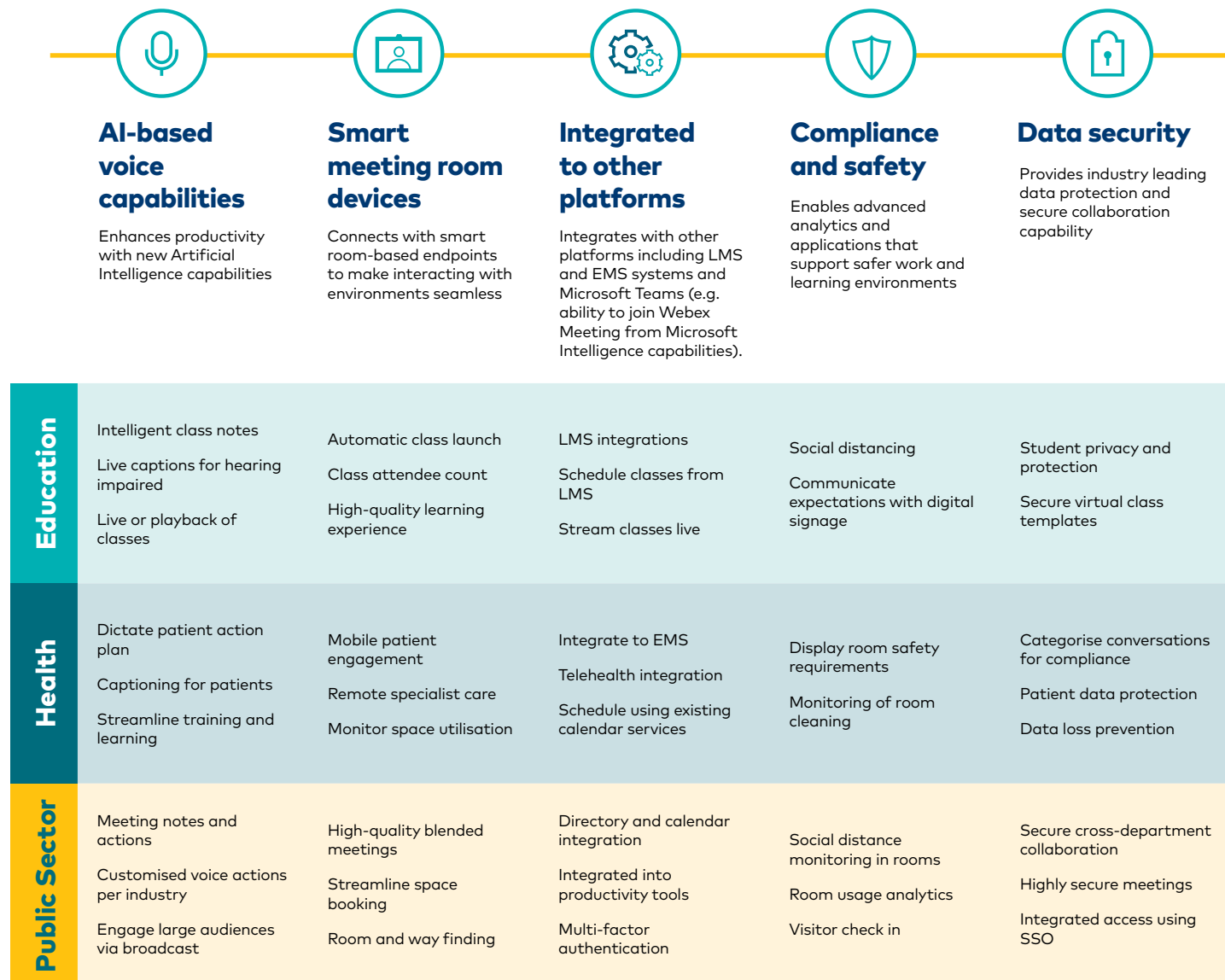
The future of digital collaboration technology will involve more blurring of the lines between the physical and virtual worlds. Cisco, for example, has a vision to make the Webex experience 10x better than meeting in person.⁶

New features to Webex have recently been introduced, bringing benefits to each sector, including the acquisition of BabbleLabs by Cisco which removes background noise from video calls.

"Our goal, at the largest level, is to make sure that the experience you get from Webex is 10x better than what you could have experienced if you were meeting in person... In fact, my contention would be that when you are actually meeting someone in person, that you still want Webex turned on, because it can do things that you might have not otherwise have been able to do as effectively through sitting and talking to them in a complete analogue form."

– Jeetu Patel, Senior Vice President and General Manager, Security and Business Applications, Cisco

Figure 11: Recent Webex innovations including enhancements to sound quality experience



6 <https://diginomica.com/cisco-webex-chief-make-web-meetings-10x-better>



Case study: How Webex "Smart" rooms can bridge safety concerns employees have returning to work

Data shows that the highest risk of contracting COVID-19 is in close physical proximity with an infected person for long periods of time. How can companies mitigate this and accelerate returning to the office in a safe manner?

Webex Rooms provide a range of features that support safe return to the office. When you enter a room, the Webex System will count the number of people and based on what the criteria are for that time, it will notify the users in the room on the screen when there are too many people in the room. If integrated with a workspace management system, it can even provide alternatives that are available as well as show them the safe way of getting to that room.

Webex Room also has a range of integrations that can alert people to leave the room when the carbon dioxide levels exceed prescribed limits and adjust the amount of air volume and percentage of fresh air based on the number of people in the room. Aside from allowing for a safer air environment, this allows reduced energy consumption.

Case study: How Cisco and Microsoft have come together to deliver a better user experience

Cisco and Microsoft have partnered to enable Cisco's Webex Video devices to connect to the Microsoft Teams meeting services in multiple ways. The point at which MS Teams and Webex are integrated depends on the organisation's specific objectives, legacy technology and cost.

Many organisations opt to use the basic functionality available in MS Office 365 and internal MS Team meetings (which are generally free as part of standard licenses) but integrate with Webex for more advanced functionality which isn't included in the standard MS suite.

For example, Cisco and Microsoft have enabled a direct guest join capability from one another's video conferencing device. A guest can join a Microsoft Teams meeting from a Webex Room Device and join a Cisco Webex Meeting from a Microsoft Teams room. These different points of integrations enable customers in multivendor environments to achieve frictionless collaboration across multiple vendors while optimising costs.

Digital Collaboration Case Studies

These innovations are already being leveraged within government, education and health

Figure 12: Case study on education



Design principles for collaboration



NIIN's research identified imperatives for organisations when implementing collaboration platforms. Organisations need to clarify collaboration goals, manage change and customise platforms for individuals, teams and workflows.

The technology itself needs to be scalable, resilient and secure. A few collaboration platforms – particularly those that are consumer-focused – have been exposed from a security perspective.

Considering the potential risks of a data breach to reputation, trust and sensitive data security has now become critical to collaboration implementation.

Figure 13: Non-negotiable elements of collaboration technology



Scalability

Able to expand or contract with changes in demand and support for high number of simultaneous collaborators



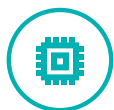
Simplicity

Designed to involve minimal learning curve and enable meetings to be set up and attended quickly



Security

Data is encrypted end-to-end and administrators have access to compliance visibility and control tools to ensure - the privacy and security of users and their content



Interoperable with other platforms and endpoints

Integrated into industry-leading apps and hardware end-points to enable users to seamlessly share data across apps and keep their keep current workflows



Immersive experience

Connects to collaboration specific hardware including telepresence, touch screens, HD video, speaker tracking and interactive whiteboards



Institution owns content

Data sovereignty is protected and not owned by third parties (as is the case with some third party consumer collaboration platforms)



Decisions about the eventual blueprint design should be informed by the user view, whether that be a student, staff member, researcher or potentially visitor / industry partner. Typically, this process involves six steps:

1. Nomination of different user types.
2. Identification of different journeys for those users.
3. Assessment of current productivity levels.
4. The degree and source of friction in their interactions.
5. Understanding key touchpoints.
6. Assessing the business impact including cost of those points of friction for different users.

Worker Type

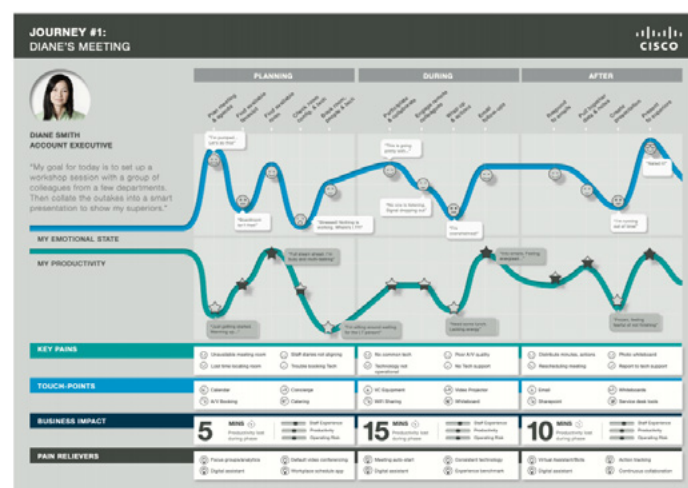
Rovers, concentrators

Human-Centred

Understand me and my journeys

Productivity

Where am I most productive?



Where is the friction

What inhibits or upsets me?

Key Touchpoints

Points of interaction

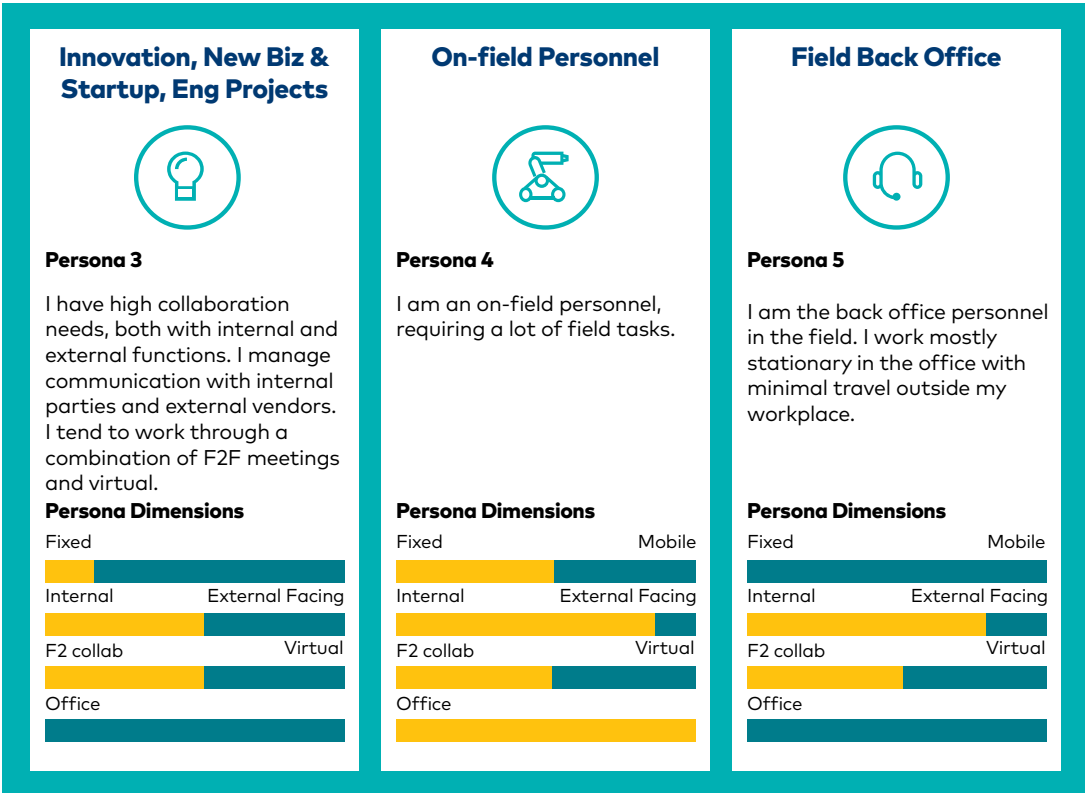
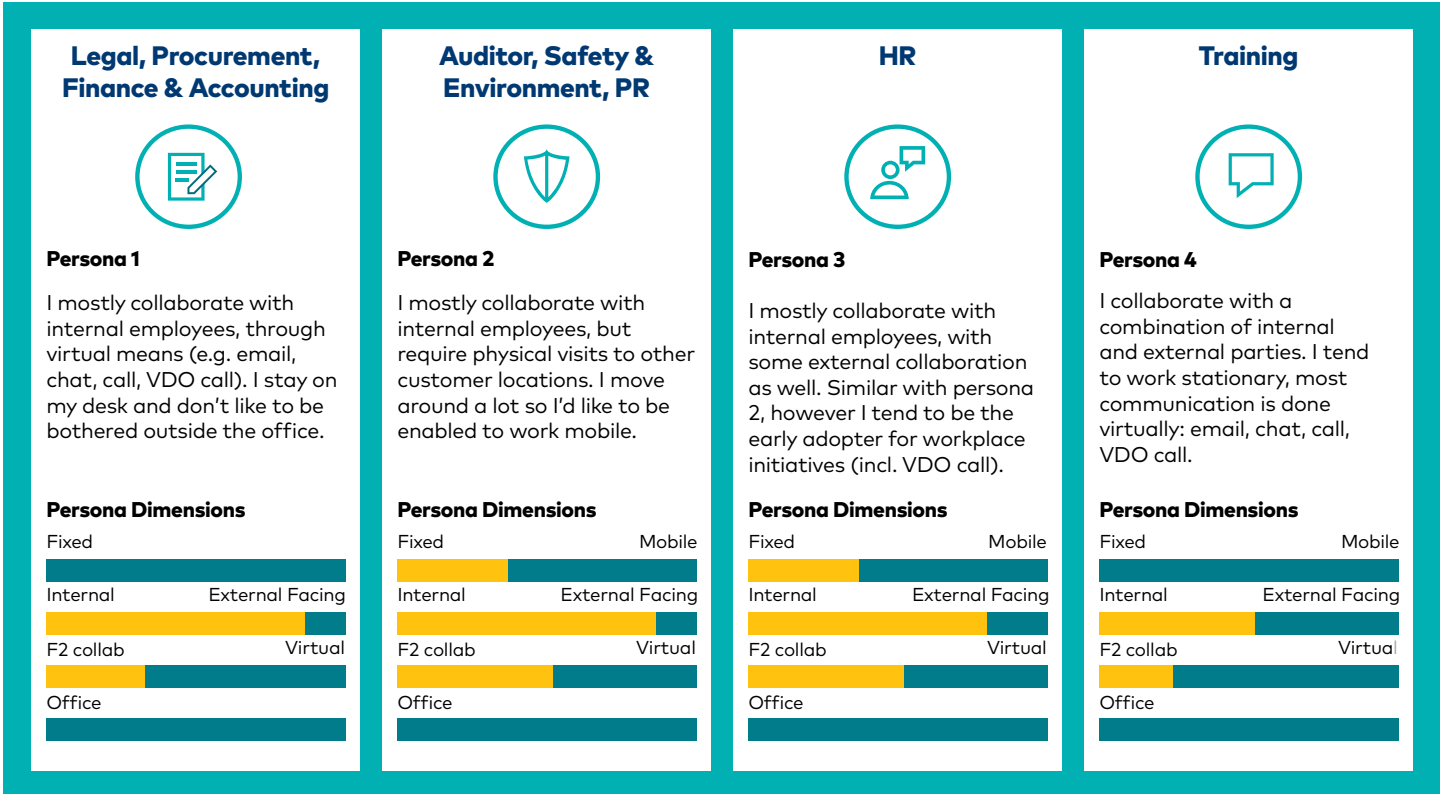
Business Impact

Productivity, risk, cost



Users are typically presented as `personas' which allows an evidence-based - and generally quantitative - approach to be taken.

The table below identifies a range of typical personas within an organisation and maps how their collaboration profiles are vastly different. The strategy and prioritisation of investment will be driven by the priority of these personas and the relative inefficiency of individual journeys taken by those users.



Potential collaboration blueprint design

While the collaboration strategy is critical, most organisations are realising that the first step in the digitisation of any process or experience starts with a platform of underlying secure infrastructure.

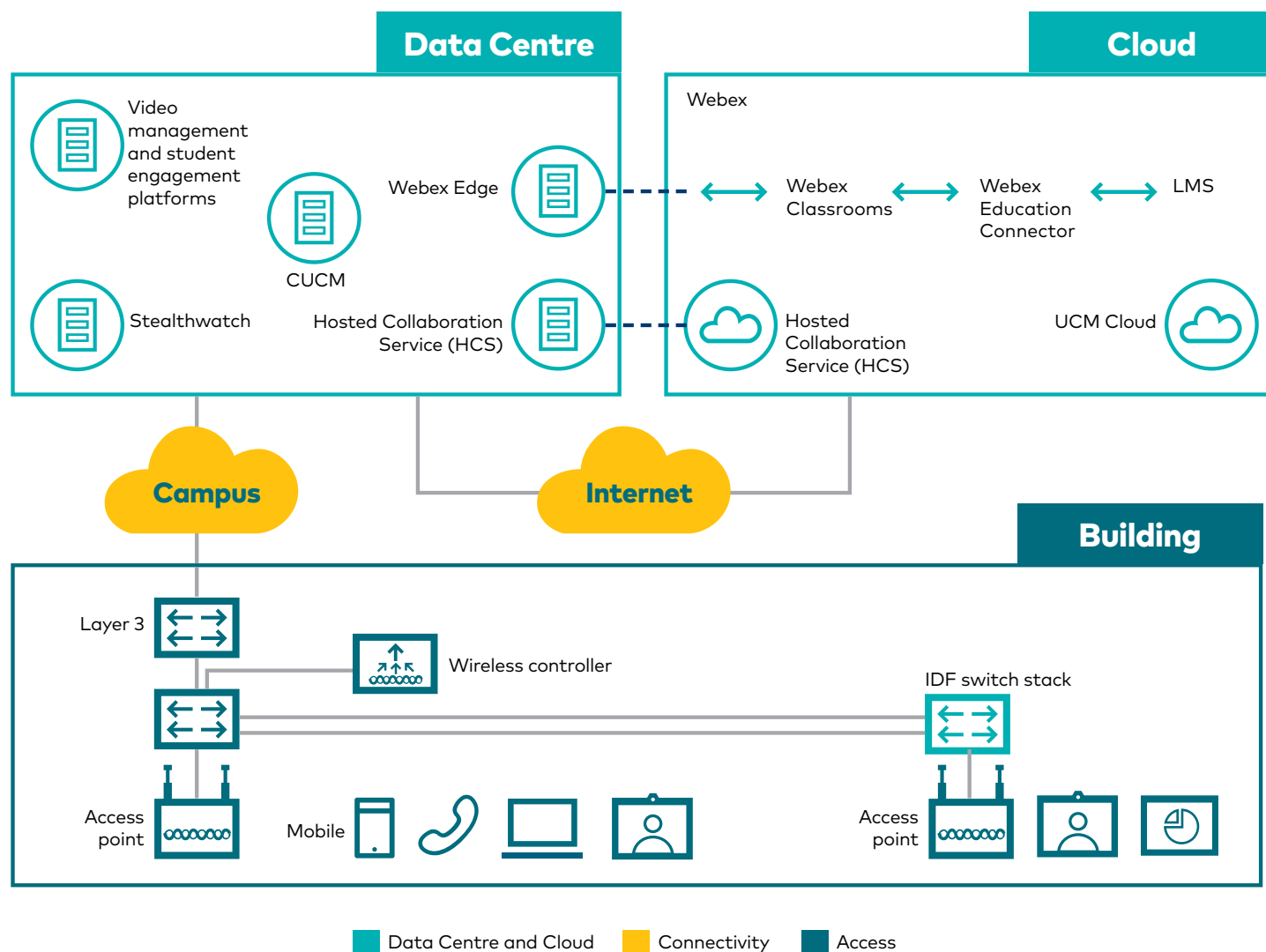
That infrastructure is increasingly cloud-based and includes a mix of wireless and fixed access technologies. Integration between Wi-Fi 6 and 5G is beginning to occur and organisations are increasingly focused on understanding the role 5G will play as it's rolled out.

The underlying platform creates opportunities for innovation at the application layer, including integration with a range of third-party applications.

For collaboration technology, those integrations are commonly with learning management systems (education) and electronic medical record platforms (health). For example, in the case of Webex, Cisco and Microsoft have partnered to enable frictionless integration, allowing guests to join a Microsoft Teams meeting from a Webex Room device and vice versa.

While technology is critical, so are the wraparound management and integration services required to ensure collaboration technology is embedded in an organisation's environment. Optus, as an example, offers Smart Classroom services that include the connection and securing of specialist room-based technology such as Webex Boards, microphones and screens.

Figure 14: Example of a typical collaboration blueprint design for higher education





How to progress the discussion

Cisco and Optus are keen to partner with institutions and systems in healthcare and education to map the collaboration journey. This could take a number of forms but in general includes:

- Mapping health and education outcomes and how success will be measured.
- Identifying personas and journeys, and understanding where inefficiencies exist.
- Articulating technology non-negotiables including interoperability and security.
- Developing a collaboration strategy that meets operational and technical objectives.
- Maximising adoption and facilitating change management.

To start the conversation, contact your Cisco or Optus Account Manager.

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