

From: Paul James <Paul.James@dia.govt.nz<mailto:Paul.James@dia.govt.nz>>
Sent: Thursday, 20 February 2020 8:13 AM
To: Iona Holsted <Iona.Holsted@education.govt.nz<mailto:Iona.Holsted@education.govt.nz>>
Cc: Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz<mailto:Ellen.MacGregor-Reid@education.govt.nz>>; Stuart Wakefield <Stuart.Wakefield@education.govt.nz<mailto:Stuart.Wakefield@education.govt.nz>>; [REDACTED] 9(2)(a) [REDACTED] Ann-Marie Cavanagh <Ann-Marie.Cavanagh@dia.govt.nz<mailto:Ann-Marie.Cavanagh@dia.govt.nz>>; Chris Webb <Chris.Webb@dia.govt.nz<mailto:Chris.Webb@dia.govt.nz>>; Paul Ash [DPMC] <Paul.Ash@dpmc.govt.nz<mailto:Paul.Ash@dpmc.govt.nz>>
Subject: RE: "In-Confidence" Microsoft

Fantastic, thanks Iona.

Stuart —Ann-Marie, Chris Webb and Paul Ash are key contacts. I've copied them in and they will be in touch with you and Ellen.

Cheers
Paul

From: Iona Holsted <Iona.Holsted@education.govt.nz<mailto:Iona.Holsted@education.govt.nz>>
Sent: Wednesday, 19 February 2020 1:06 PM
To: Paul James <Paul.James@dia.govt.nz<mailto:Paul.James@dia.govt.nz>>
Cc: Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz<mailto:Ellen.MacGregor-Reid@education.govt.nz>>; Stuart Wakefield <Stuart.Wakefield@education.govt.nz<mailto:Stuart.Wakefield@education.govt.nz>>; [REDACTED] 9(2)(a) [REDACTED]
Subject: RE: "In-Confidence" Microsoft

"In-Confidence"

Kia ora Paul

Thank you for the opportunity to engage in the Microsoft initiative.

We can help influence demand for the NZ based Microsoft cloud through our school software licensing agreement once more details are known about pricing and availability. Assuming its competitive with their Australian cloud offering, it would help address some of the risks and concerns some schools and stakeholder groups have about data sovereignty. For example we could potentially locate the Te Rito data in NZ once this is available.

On the "lighthouse" opportunities this could be a good use of the EDDB to bring together the agencies and identify some system level challenges that would benefit from application of AI or other technology in some way. AI in education seems primarily focussed in areas like personalising learning and driving administrative efficiency through automation so these could be places to start.

The specific area of "AI for accessibility" could lend itself to some of the Assistive Technologies used within Learning Support. There have been some significant advances in this area recently, but many require some degree of localisation to be useful.

If you could have your team engage directly with Ellen MacGregor-Reid, chair of our Education Digital & Data Board and Stuart Wakefield, CDO, we will work with you to scope these up for further consideration.

Ngā mihi

Iona

From: Paul James [<mailto:Paul.James@dia.govt.nz>]
Sent: Tuesday, 18 February 2020 2:27 p.m.
To: 'mark.sowden@stats.govt.nz'
<mark.sowden@stats.govt.nz<<mailto:mark.sowden@stats.govt.nz>>>;
'carolyn.tremain@mbie.govt.nz'
<carolyn.tremain@mbie.govt.nz<<mailto:carolyn.tremain@mbie.govt.nz>>>; Iona Holsted
<Iona.Holsted@education.govt.nz<<mailto:Iona.Holsted@education.govt.nz>>>;
'andrew.hampton@gcsb.govt.nz'
<andrew.hampton@gcsb.govt.nz<<mailto:andrew.hampton@gcsb.govt.nz>>>;
'Ashley.Bloomfield@health.govt.nz'
<Ashley.Bloomfield@health.govt.nz<<mailto:Ashley.Bloomfield@health.govt.nz>>>;
'naomi.ferguson@ird.govt.nz'
<naomi.ferguson@ird.govt.nz<<mailto:naomi.ferguson@ird.govt.nz>>>; 'Gaye Searancke'
<gsearancke@linz.govt.nz<<mailto:gsearancke@linz.govt.nz>>>; Stephen Crombie
<Stephen.Crombie007@msd.govt.nz<<mailto:Stephen.Crombie007@msd.govt.nz>>>;
'nicole.rosie@nzta.govt.nz' <nicole.rosie@nzta.govt.nz<<mailto:nicole.rosie@nzta.govt.nz>>>;
'Dorothy Adams' <Dorothy.Adams@sia.govt.nz<<mailto:Dorothy.Adams@sia.govt.nz>>>;
'christine.stevenson@customs.govt.nz'
<christine.stevenson@customs.govt.nz<<mailto:christine.stevenson@customs.govt.nz>>>
Cc: Ann-Marie Cavanagh <Ann-Marie.Cavanagh@dia.govt.nz<<mailto:Ann-Marie.Cavanagh@dia.govt.nz>>>; Chris Webb
<Chris.Webb@dia.govt.nz<<mailto:Chris.Webb@dia.govt.nz>>>; Paul Ash [DPMC]
<Paul.Ash@dpmc.govt.nz<<mailto:Paul.Ash@dpmc.govt.nz>>>; Gill Palmer
<Gill.Palmer@dia.govt.nz<<mailto:Gill.Palmer@dia.govt.nz>>>
Subject: "In-Confidence" Microsoft

"In-Confidence"

Kia ora DGLG colleagues

You will be aware of Microsoft's investigations over the past 9 months of investing in New Zealand to establish a Hyperscale Cloud capability. I can advise, in-confidence, that this is now an approved investment and Microsoft are in the final stages of securing land and going through the Overseas Investment process. We need to treat this as restricted information, as Microsoft

plans could be derailed, for example if information was made public prior to agreeing land pricing. We expect a public announcement by Microsoft in the next 60/90 days.

One of the steps underway with Microsoft is updating the All of Government MoU we have with them, and part of that is identifying possible 'Lighthouse' projects we will work on together. An area of focus for Microsoft, when they invest heavily in a country, is to identify initiatives which they can work with Government and non-government on to have a significant national impact. These "Lighthouse" projects map to their AI For Good programme which is described at <https://www.microsoft.com/en-us/ai/ai-for-good>

While not directly connected to the investment decision, these lighthouse projects are significant to Microsoft's leadership and our wider relationship with them. Which leads me to the point of this email, we would like your help to try and identify possible Lighthouse projects.

AI For Good releases a focus and resource base from Microsoft to work on approved initiatives. There are 5 general groupings for initiatives (Earth, Health, Accessibility, Humanitarian Action and Cultural Heritage) and below are links to some examples of existing ones.

I'm reaching out to you for your ideas for candidates. We're firming up with MBIE something around future of work, digital skills and small-medium size enterprises. We need another 1-2 good ideas. This is a real opportunity to gain access to world leading assistance with a challenging problem. In general terms they need to be something an organisation like Microsoft can help with, so have a data /AI /technology need (which more and more is everything we do!). Ideally they would be a project with some level of scoping or work underway, as we need to be able to partner effectively with Microsoft.

If you do have any ideas then please let me know and I will arrange for someone to work with your team to shape it up.

Kind regards

Paul

Paul James | Chief Executive

Department of Internal Affairs Te Tari Taiwhenua

Tel: +64 4 495 7246 | www.dia.govt.nz

45 Pipitea Street, Thorndon | PO Box 805, Wellington 6140, New Zealand |

www.dia.govt.nz

<image001.png>

From: Chris Webb

Sent: Monday, 8 June 2020 11:46 AM

To: Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz>

Cc: Stuart Wakefield <Stuart.Wakefield@education.govt.nz>; Ed Strafford

<Ed.Strafford@education.govt.nz>; Mark Horgan <Mark.Horgan@education.govt.nz>; [REDACTED]

9(2)(a)

Subject: RE: "In-Confidence" Microsoft - Education Lighthouse Project

Hi Ellen, Et al,

I hope you and yours are all well.

Since our meeting in March and my note in summary below, things changed for everyone & everything somewhat and very quickly! I know that education was and still is, at the centre of the response.

Also since then, on 6th May, Microsoft went public with their investment plans for NZ and the PM used her daily COVID update to share this as a sign of moving now to the economic recovery phase. Her message being that this massive investment by a global corporation was a sign of confidence in NZ as a nation and economically.

I just wanted to check in with you regarding the Lighthouse initiative we included in our updated MOU with Microsoft (Advancing Digital Nations) and which we had an initial meeting about on 6th March.

My perspective is that if anything the thinking behind the project is probably even more relevant now that it was pre COVID, but would be interested in your thoughts.

If you feel it is appropriate timing can I suggest we arrange a meeting, this time including the relevant MS contacts, to review and begin the process to progress this initiative?

Happy to discuss the approach with you if you wish prior to any such meeting.

Kind regards

Chris Webb | General Manager

Government Chief Digital Office

Digital Public Services Branch

Department of Internal Affairs Te Tari Taiwhenua

Phone: 9(2)(a) [REDACTED] www.dia.govt.nz

-----Original Message-----

From: Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz>

Sent: Saturday, 7 March 2020 12:01 PM

To: Chris Webb <Chris.Webb@dia.govt.nz>

Cc: Stuart Wakefield <Stuart.Wakefield@education.govt.nz>; Ed Strafford

<Ed.Strafford@education.govt.nz>; Mark Horgan <Mark.Horgan@education.govt.nz>; [REDACTED]

9(2)(a)

Ann-Marie Cavanagh <[Ann-](mailto:Ann-Marie.Cavanagh@dia.govt.nz)

Marie.Cavanagh@dia.govt.nz>; George Pallikaros <George.Pallikaros4@mbie.govt.nz>

Subject: Re: "In-Confidence" Microsoft - Education Lighthouse Project

Thanks for the summary and update Chris. Looks good to me.

Sent from my iPhone

On 6/03/2020, at 1:56 PM, Chris Webb <Chris.Webb@dia.govt.nz> wrote:

Hi Ellen/Stuart/Ed/Mark,

Thank you for your time on Monday to discuss the work with Microsoft and in particular the Education Lighthouse project included in the MOU, "Supporting learning in the new digital context".

The MOU outlines a process and governance model for Lighthouse projects, as mentioned please

find attached the relevant section of the MOU covering this. At the end of this email trail are links to some example Lighthouse projects. The Microsoft AI for Good programme is described at <https://www.microsoft.com/en-us/ai/ai-for-good>.

Our discussion reinforced for us the real opportunity in the area you have proposed. We explored a number of specific but also interrelated, areas including learning support, records of achievement, personalised learning, teacher support, absence mapping, life-long learning and the challenges brought by having a broad curriculum. You noted that while there are some really good approaches and solutions using technology for some of these areas, localisation is a key element for many to allow them to be applied.

In addition the connection into other existing AI and machine learning based initiatives became clear for example, the Te Reo translator and how this might impact and support addressing challenges in bringing the curriculum to Te Reo speaking children as they enter the primary education system for example.

There is also real opportunity to explore how we can release the value of the existing significant data holdings in the sector to support learning and decision making both at a policy and practical level, in new ways.

It was noted that while this is a discussion with the Ministry, involving the broader sector and stakeholders was another lens to bring for example the tertiary sector and NZQA.

On Wednesday Paul James, Ann-Marie and I met with Microsoft executives following the signing of the MOU and discussed the immediate steps, which included setting up the governance and approach to progress the two identified Lighthouse projects. This aligns well with what we discussed on Monday as next steps;

* to mobilise the governance and working group to focus on this project, this may involve others in Education

* begin the process of involving MS to explore and scope specific projects (as we left Stuart you mentioned that you may put some ideas down as input to this process).

Let me know if I have missed or misinterpreted anything.

We look forward to working with you to progress this project. I will be the contact to initiate the next steps.

Kind regards

Chris Webb | General Manager
Government Chief Digital Office
Digital Public Services Branch

Department of Internal Affairs Te Tari Taiwhenua

Phone: 9(2)(a) | www.dia.govt.nz

From: Paul James <Paul.James@dia.govt.nz>

Sent: Thursday, 20 February 2020 8:13 AM

To: Iona Holsted <Iona.Holsted@education.govt.nz>

Cc: Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz>; Stuart Wakefield

<Stuart.Wakefield@education.govt.nz>;

9(2)(a)

Ann-Marie

Cavanagh <Ann-Marie.Cavanagh@dia.govt.nz>; Chris

Webb <Chris.Webb@dia.govt.nz>; Paul Ash [DPMC]

<Paul.Ash@dpmc.govt.nz>

Subject: RE: "In-Confidence" Microsoft

Fantastic, thanks Iona.

Stuart — Ann-Marie, Chris Webb and Paul Ash are key contacts. I've copied them in and they will be in touch with you and Ellen.

Document 3

Subject: FW: Education lighthouse project - meeting follow up

Hi Sandy,

9(2)(a) has suggested you as the MOE lead on this initiative. Let me know when you have some time avail and will talk you through it in a bit more detail

Rgds

Stuart

Stuart Wakefield | Chief Digital Officer

DDI +64 4 4638393

From: 9(2)(a)

Sent: Thursday, 23 July 2020 2:54 p.m.

To: 9(2)(a); Ann-Marie.Cavanagh@dia.govt.nz;

Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz>;

9(2)(a)

Stuart Wakefield <Stuart.Wakefield@education.govt.nz>; Paul Ash [DPMC]

<paul.ash@dpmc.govt.nz>; Chris Webb <Chris.Webb@dia.govt.nz>;

9(2)(a)

9(2)(a) 9(2)(a)

Subject: Education lighthouse project - meeting follow up

Kia ora Ellen and team,

On behalf of 9(2)(a) and me, thanks very much for your time on the call earlier this week. It was great to align our thinking on the lighthouse project, and it was clear that the team see this as a significant opportunity to impact the New Zealand education system.

We captured some discussion points and themes that will help us shape the design of the lighthouse project:

- The challenges and opportunities set out in the MoU still remain.
- There is a deficit of data across the system e.g. lack of testing data
- Current digital curriculum assumes all teachers are “super teachers”, whereas teachers need strong support to personalise curriculum to learner needs
- There is no nationwide LMS
- Data does not follow students between schools (Te Rito programme)
- Specialised needs of neuro diverse students need to be better met.
- 50% of schools not confident teaching remotely
- Digital readiness of students and whanau is uneven (equitable digital access)
- The project needs to:
 - be people-centric, and cognisant of the readiness and mindset of educators ;
 - take a holistic, connected system approach; and
 - be underpinned by security and privacy.
- Key inputs will be:

- data;
 - identity; and
 - automation.
-
- How can we use the existing Ministry datasets to leverage AI and ML to deliver personalised learning to neuro diverse students?
 - How can we use AI and data to augment/support current decision making processes?
 - Hybrid and blended learning options – three areas to leverage are the back office, school and beyond school.
 - How do we use AI and data to reduce the digital divide in New Zealand?
 - Data protection and user transparency are important.
 - A great example of what AI can enable in education is our [Microsoft Immersive Reader](#).

You've no doubt got a similar list of takeaways from the discussion, which we're keen to see.

The next steps are for the Ministry and Microsoft to identify project members and have a kick-off brainstorm session to further define the scope of the project. As noted on the call, 9(2)(a) and I will co-lead on behalf of Microsoft NZ, with the support of 9(2)(a) and his global team.

9(2)(a) also referenced the Microsoft Education Transformation Framework and assessment. Here is a [link to the ETF](#) and here is the [link to the assessment](#). As discussed, we're happy to work through the assessment tool with you.

All-in-all, we were very excited by the discussion and are looking forward to taking this forward with you. We'll be in touch with you next week to start planning next steps.

Nga mihi nui,

9(2)(a)

| National Technology Officer | Microsoft NZ

russell.craig@microsoft.com | Office: +64 4 470 6585 | Mobile: 9(2)(a) | [LinkedIn](#)



From: 9(2)(a)
To: [Sandy Britain](#); 9(2)(a)
Subject: RE: Education Lighthouse Project
Date: Wednesday, 19 August 2020 3:59:05 pm

Understood.

From: Sandy Britain <Sandy.Britain@education.govt.nz>
Sent: Wednesday, August 19, 2020 3:55 PM
To: 9(2)(a)
Subject: [EXTERNAL] RE: Education Lighthouse Project
Thankyou 9(2)(a)

I am reluctant to cut across a process for engagement that has already been put in place within the Ministry, though I would find it helpful to have an informal chat to understand the background from Microsoft's perspective – especially having come in after the initial briefing. I'll consult and be in touch.

Cheers
Sandy

From: 9(2)(a)
Sent: Wednesday, 19 August 2020 1:29 PM
To: Sandy Britain <Sandy.Britain@education.govt.nz>; Stuart Wakefield <Stuart.Wakefield@education.govt.nz>; 9(2)(a) Mike Watson <Mike.Watson@education.govt.nz>

Subject: RE: Education Lighthouse Project
OK - standing by. Still happy to chat and give you background context from MSFT perspective if that would be helpful.

From: Sandy Britain <Sandy.Britain@education.govt.nz>
Sent: Wednesday, August 19, 2020 1:08 PM
To: 9(2)(a) Stuart Wakefield <Stuart.Wakefield@education.govt.nz>; 9(2)(a) Mike Watson <Mike.Watson@education.govt.nz>

Subject: [EXTERNAL] RE: Education Lighthouse Project
Hi 9(2)(a)

I have just spoken with Mike on the phone and it appears I may have jumped the gun somewhat. Apparently the plan is for the various Ministry stakeholders to meet internally for an initial scoping and alignment session in the next week or so. To avoid any confusion it would make sense to wait until we have had that session and then arrange to come back and talk with you after that.

Apologies for being a bit quick off the mark there!
Sandy

From: 9(2)(a)
Sent: Wednesday, 19 August 2020 10:43 AM
To: Sandy Britain <Sandy.Britain@education.govt.nz>; Stuart Wakefield <Stuart.Wakefield@education.govt.nz>; 9(2)(a)

Subject: RE: Education Lighthouse Project
Thanks Sandy - I'll get out the meeting invitation today. Could you check with Mike re his availability at the times proposed?

Cheers,
9(2)(a)

The Ministry of Education has had a meeting with DIA and Microsoft regarding a Lighthouse project (I hope I have this right) that is to explore opportunities for innovative projects in NZ. I have been asked by Senior Management here to get hold of the T&C's that relate to the agreement between DIA and Microsoft for this initiative. It is very important that we understand the boundaries that have been agreed and that MoE are able to understand how this project is supposed to work, especially with other initiatives that we have going and planned

Are you able to send me a copy of this agreement?

Cheers

9(2)(a) | Procurement Manager
BE&S Corporate Procurement
Mobile 9(2)(a)
The Terrace, Wellington, 22

education.govt.nz

***We shape an education system that delivers equitable and excellent outcomes
He mea tārai e mātou te mātauranga kia rangatira ai, kia mana taurite ai ōna huanga***

Cheers Sandy

From: 9(2)(a)

Sent: Monday, 14 September 2020 3:52 PM

To: 9(2)(a) Pauline Cleaver

<Pauline.Cleaver@education.govt.nz>; 9(2)(a)

Cc: Sandy Britain <Sandy.Britain@education.govt.nz>

Subject: FW: Project Constellation alignment with the Ministry of Education Lighthouse project
Hi 9(2)(a), Pauline & Wendy

As part of the announcement that Microsoft will build a new datacentre in New Zealand, the Ministry has kicked off a project with Microsoft that Stuart sponsoring (with reporting to Ellen).

To explore this more Microsoft is looking to run some workshop as outlined below.

Can you please confirm if you would like to have people from your area be involved in the initial meetings, if so please confirm who.

If you have any question, please contact me.

Thanks

9(2)(a)

9(2)(a) | Commercial Manager | IT Group

DDI +64 4 463 7754 | Mobile 9(2)(a)

From: 9(2)(a)

Sent: Wednesday, 9 September 2020 12:35 PM

To: Sandy Britain <Sandy.Britain@education.govt.nz>; 9(2)(a)

9(2)(a)

Cc: 9(2)(a)

9(2)(a)

Subject: Project Constellation alignment with the Ministry of Education Lighthouse project

Kia ora Sandy and 9(2)(a)

Further detail about the Lighthouse project and the our suggestion that Project Constellation would be a great project that would support the Lighthouse objective.

Background on the Lighthouse Project

From the **'Advancing Digital Societies'** MoU between the GCDO and Microsoft

Lighthouse project with the Ministry of Education

"Supporting learning in the new digital context. Teachers being able to effectively personalise learning for the children and young people they work with is important both for education outcomes and teacher well-being. AI can play an important role in this space. AI applications in support of educational outcomes can include exploration of AI for helping to break down the barriers many children face due to learning support needs. GCDO, working closely with the Ministry of Education as the sector lead, will facilitate a range of agencies to work with Microsoft, and appropriate third party stakeholders, to investigate creating a program to apply AI and other digital capabilities to support New Zealand's Educational outcomes in a digital context including, for example, those who are currently challenged with accessibility and learning issues."

Microsoft's suggestion is that the Ministry join Project Constellation.

Project Constellation: Global Partnership on Learning Analytics

As part of its response to the COVID-19 crisis and international school closures, Microsoft Education joined the UNESCO [Global Education Coalition](#) in developing system-wide solutions for remote learning. Education systems now urgently need data and insights on who is participating in remote and hybrid learning, how these models are being implemented, and what teaching practices are most effective in advancing learning outcomes.

To respond to this need, we are inviting a small group of education systems to join Project Constellation, an education analytics research partnership sponsored by Microsoft Education. The partnership will focus on using data from digital learning environments to gain visibility into how to improve learning holistically amid the 'new normal.' Joining this partnership will provide education systems:

1. Microsoft's expertise in data security, privacy and governance
2. Learning analytics based in existing deployments of Microsoft's O365 platform in schools
3. Support to develop data and AI expertise, supported by Microsoft and the partnership's collaboration
4. Opportunity to be part of a global thought leadership community in using data and AI to advance learning.

This opportunity will leverage Microsoft's new education analytics solutions. These solutions provide continuous live reports on the digital learning activities of students and teachers across all schools in the system based on app usage and activity in Microsoft O365. Reports will show patterns of digital learning activities during the pandemic and as systems re-open. Schools will be able to see how digital learning activities have supported the continuity of learning, where there are gaps (e.g. identify equity barriers), and how engagement patterns are changing over time. Schools can use this data to see where teachers may need training and professional development, and where students may need additional supports to access learning remotely. Microsoft's analytics solutions will set the foundation for Project Constellation, where partners will combine O365 digital learning activity data with other system data (e.g., assessment outcomes, professional learning, skills measures) in secure cloud data lakes (Azure). Partners will work with Microsoft and university data science teams to integrate these data resources and run advanced analytics on key research questions, using data that has been secured and anonymized in each partner's private cloud data lake. Partners will collaborate with each other, university partners, and Microsoft data experts to build analytics expertise and provide rapid insights amid the changing global landscape of education.

Let me know who from the Ministry needs to be on the call and I'll include them in the meeting invite.

Thanks

9(2)(a)

Education Industry Manager

9(2)(a)



Nothing can stop a team.

Work remotely with [Microsoft Teams](#).

From: 9(2)(a)

Sent: Tuesday, 15 September 2020 1:07 PM

To: Chris Harwood <Chris.Harwood@education.govt.nz>; Pauline Cleaver <Pauline.Cleaver@education.govt.nz>; Rose Carpenter <Rose.Carpenter@education.govt.nz>

Subject: RE: Project Constellation alignment with the Ministry of Education Lighthouse project
Hi Chris, Pauline and Rose

As Chris has already given you the background I will not restate it.

I contacted DIA in several different ways (email and phone) and were unable to get a response and also unable to get a copy of the MOU.

But, DIA have been in contact with Stuart Wakefield on this project and he has allocated Sandy Britain to head this piece of work. Sandy got in touch with me as he was at the meeting as mentioned by Chris. I gave Sandy the information that I have and pointed out that the RFP risk that I had identified at the meeting was now reduced as the RFP responses have been received and so there is less likelihood that Microsoft could unfairly advantage one respondent over another by passing on information. That said, the RFP process is still going on and we would want to ensure that confidentiality is maintained with Microsoft until the process is complete. There is a meeting between Sandy and DIA on Thursday this week but unfortunately I am unable to attend it.

Cheers

9(2)(a) | Procurement Manager
BE&S Corporate Procurement
Mobile 9(2)(a)
The Terrace, Wellington, 22

education.govt.nz

*We shape an education system that delivers equitable and excellent outcomes
He mea tārai e mātou te mātauranga kia rangatira ai, kia mana taurite ai ōna huanga*



From: Chris Harwood

Sent: Tuesday, 15 September 2020 12:36 PM

To: Pauline Cleaver <Pauline.Cleaver@education.govt.nz>

Cc: Rose Carpenter <Rose.Carpenter@education.govt.nz>; 9(2)(a)

9(2)(a)

Subject: RE: Project Constellation alignment with the Ministry of Education Lighthouse project
Hi Pauline

I have asked 9(2)(a) to draft a daily note for you about this.

A couple of weeks ago, 9(2)(a) and I joined a meeting with Ellen, Stuart, Zoe and Mike Watson to talk about next steps with this initiative. The agreements around the Ministry's participation in this initiative were vague, nobody had access to any kind of MOU or expression of what was or was not on the table in terms of scope. I was concerned about the potential for a perceived conflict of interest with respect to the RFP for the TKI replacement given the focus on the Microsoft suite of products.

Ellen asked 9(2)(a) to follow up with MBiE (I think??) and to provide some advice around next steps. I am not sure where this is at but have asked 9(2)(a) to provide an update today.

It is likely to be a very futuristic opportunity that should be fine but we should be clear about the parameters for the work.

Thanks Chris

Chris Harwood | Senior Manager | Early Learning and Student Achievement
Mobile +9(2)(a)

From: Pauline Cleaver

Sent: Monday, 14 September 2020 4:38 p.m.

To: DL ELSA P&P Leadership Team <DLELSAP&PLeadershipTeam@education.govt.nz>; Tom Haig <Tom.Haig@education.govt.nz>; Kiritina Johnstone <Kiritina.Johnstone@education.govt.nz>

Subject: FW: Project Constellation alignment with the Ministry of Education Lighthouse project
I am keen to get a few people on this good opportunity

Pauline Cleaver | Associate Deputy Secretary | Curriculum, Pathways & Progress
DDI +64 4 463 8110 | Mobile 9(2)(a)

From: 9(2)(a)

Sent: Monday, 14 September 2020 3:52 PM

To: 9(2)(a); Pauline Cleaver <Pauline.Cleaver@education.govt.nz>; 9(2)(a)

Cc: Sandy Britain <Sandy.Britain@education.govt.nz>

Subject: FW: Project Constellation alignment with the Ministry of Education Lighthouse project
Hi 9(2)(a) Pauline & 9(2)(a)

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Thanks

9(2)(a)

| Commercial Manager | IT Group
DDI +64 4 463 7754 | Mobile 9(2)(a)

From: 9(2)(a)

Sent: Wednesday, 9 September 2020 12:35 PM

To: Sandy Britain <Sandy.Britain@education.govt.nz>; 9(2)(a)

9(2)(a)

Cc: 9(2)(a)

9(2)(a)

Subject: Project Constellation alignment with the Ministry of Education Lighthouse project
Kia ora Sandy and 9(2)(a)

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barriers many children face due to learning support needs. GCDO, working closely with the Ministry of Education as the sector lead, will facilitate a range of agencies to work with Microsoft, and appropriate third party stakeholders, to investigate creating a program to apply AI and other digital capabilities to support New Zealand's Educational outcomes in a digital context including, for example, those who are currently challenged with accessibility and learning issues."

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Project Constellation: Global Partnership on Learning Analytics

As part of its response to the COVID-19 crisis and international school closures, Microsoft Education joined the UNESCO [Global Education Coalition](#) in developing system-wide solutions for remote learning. Education systems now urgently need data and insights on who is participating in remote and hybrid learning, how these models are being implemented, and what teaching practices are most effective in advancing learning outcomes.

To respond to this need, we are inviting a small group of education systems to join Project Constellation, an education analytics research partnership sponsored by Microsoft Education. The partnership will focus on using data from digital learning environments to gain visibility into how to improve learning holistically amid the 'new normal.' Joining this partnership will provide education systems:

1. Microsoft's expertise in data security, privacy and governance
2. Learning analytics based in existing deployments of Microsoft's O365 platform in schools
3. Support to develop data and AI expertise, supported by Microsoft and the partnership's collaboration
4. Opportunity to be part of a global thought leadership community in using data and AI to advance learning.

This opportunity will leverage Microsoft's new education analytics solutions. These solutions provide continuous live reports on the digital learning activities of students and teachers across all schools in the system based on app usage and activity in Microsoft O365. Reports will show patterns of digital learning activities during the pandemic and as systems re-open. Schools will be able to see how digital learning activities have supported the continuity of learning, where there are gaps (e.g. identify equity barriers), and how engagement patterns are changing over time. Schools can use this data to see where teachers may need training and professional development, and where students may need additional supports to access learning remotely. Microsoft's analytics solutions will set the foundation for Project Constellation, where partners will combine O365 digital learning activity data with other system data (e.g., assessment outcomes, professional learning, skills measures) in secure cloud data lakes (Azure). Partners will work with Microsoft and university data science teams to integrate these data resources and run advanced analytics on key research questions, using data that has been secured and anonymized in each partner's private cloud data lake. Partners will collaborate with each other, university partners, and Microsoft data experts to build analytics expertise and provide rapid insights amid the changing global landscape of education.

Let me know who from the Ministry needs to be on the call and I'll include them in the meeting invite.

Thanks

9(2)(a)

Education Industry Manager

9(2)(a)

From: Sandy Britain <Sandy.Britain@education.govt.nz>

Sent: Tuesday, 6 October 2020 3:29 p.m.

To: Chris Harwood <Chris.Harwood@education.govt.nz>; Mike Watson <Mike.Watson@education.govt.nz>

Subject: FW: MoE/Microsoft Lighthouse Initiative

Hi Chris and Mike

Just forwarding the notes Adrienne has sent over from our discussion on the lighthouse project when I was in Wellington. Will be in touch to arrange a conversation about next steps.

Chris – I am planning to be in Wellington from the Tuesday next week so perhaps we can schedule a meeting in person to catch up on this and our other workstreams then if you have some time available.

Cheers Sandy

From: Adrienne Moor <Adrienne.Moor@dia.govt.nz>

Sent: Friday, 2 October 2020 2:24 PM

To: Sandy Britain <Sandy.Britain@education.govt.nz>; Russell Craig

9(2)(a)

Cc: Paul Ash [DPMC] <paul.ash@dpmc.govt.nz>; Paul Jordan <Paul.Jordan@dia.govt.nz>;

9(2)(a) Stuart Wakefield

<Stuart.Wakefield@education.govt.nz>; Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz>; 9(2)(a)

Subject: MoE/Microsoft Lighthouse Initiative

Kia ora kōrua,

Sandy thank you for meeting with us recently to discuss the status of this mahi. As discussed broadly:

- Government has entered into a non-binding MoU with Microsoft to analyse and value assess “Lighthouse” innovation partnerships. The MoU Lighthouse terms are attached for context.
- These partnerships are aspirational in nature; normally a syndicate between Microsoft, Government and non-government organisations, and aim to develop initiatives that harness Cloud capabilities along with advanced technologies/techniques, to deliver solutions that have a national impact.
- In late February the Secretary signalled to GCDO an interest in exploring opportunities to utilise AI/machine learning to augment Assistive Technologies used within Learning Support. Subsequent working sessions framed up an opportunity to consider as part of the Lighthouse kaupapa:
 - How to release the value of education data to better support learning and (policy and operational) decision making
 - How can to use existing Ministry datasets to leverage AI and ML to deliver personalised learning to neuro diverse students
 - How to use AI and data to augment/support current decision making processes
 - Hybrid and blended learning options – three areas to leverage are the back office, school and beyond school.
 - How to use AI and data to reduce the digital divide in New Zealand
- There seemed initially to be strong interest in progressing the necessary scoping activities together, though I suspect over the ensuing period focus has been needed on other events (such as COVID).

From: [Sandy Britain](#)
To: [Nina Wortman](#)
Subject: RE: Project Constellation workshop on Monday
Date: Monday, 2 November 2020 8:09:00 am

Kia ora Nina,

No problem. Here is the background from the original invite to pass onto ^{9(2)(a)}

If you could attend it would help us ensure that we can negotiate the focus of this with Microsoft with a clear eye on the needs and aspirations of learners in Aotearoa. Please note that no decision has yet been made on whether or not we position this work inside the **Constellation Project**, or if we would return to the initial italicised brief for **“Supporting learning in the new digital context...”**

A brief outline, from Microsoft, follows:

Further detail about the Lighthouse project and the our suggestion that Project Constellation would be a great project that would support the Lighthouse objective.

Background on the Lighthouse Project

From the **‘Advancing Digital Societies’** MoU between the GCDO and Microsoft Lighthouse project with the Ministry of Education

“Supporting learning in the new digital context. Teachers being able to effectively personalise learning for the children and young people they work with is important both for education outcomes and teacher well-being. AI can play an important role in this space. AI applications in support of educational outcomes can include exploration of AI for helping to break down the barriers many children face due to learning support needs. GCDO, working closely with the Ministry of Education as the sector lead, will facilitate a range of agencies to work with Microsoft, and appropriate third party stakeholders, to investigate creating a program to apply AI and other digital capabilities to support New Zealand's Educational outcomes in a digital context including, for example, those who are currently challenged with accessibility and learning issues.”

Microsoft’s suggestion is that the Ministry join Project Constellation.

Project Constellation: Global Partnership on Learning Analytics

As part of its response to the COVID-19 crisis and international school closures, Microsoft Education joined the UNESCO [Global Education Coalition](#) in developing system-wide solutions for remote learning. Education systems now urgently need data and insights on who is participating in remote and hybrid learning, how these models are being implemented, and what teaching practices are most effective in advancing learning outcomes.

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This opportunity will leverage Microsoft’s new education analytics solutions. These solutions

provide continuous live reports on the digital learning activities of students and teachers across all schools in the system based on app usage and activity in Microsoft O365. Reports will show patterns of digital learning activities during the pandemic and as systems re-open. Schools will be able to see how digital learning activities have supported the continuity of learning, where there are gaps (e.g. identify equity barriers), and how engagement patterns are changing over time. Schools can use this data to see where teachers may need training and professional development, and where students may need additional supports to access learning remotely. Microsoft's analytics solutions will set the foundation for Project Constellation, where partners will combine O365 digital learning activity data with other system data (e.g., assessment outcomes, professional learning, skills measures) in secure cloud data lakes (Azure). Partners will work with Microsoft and university data science teams to integrate these data resources and run advanced analytics on key research questions, using data that has been secured and anonymized in each partner's private cloud data lake. Partners will collaborate with each other, university partners, and Microsoft data experts to build analytics expertise and provide rapid insights amid the changing global landscape of education.

From: Nina Wortman <Nina.Wortman@education.govt.nz>

Sent: Friday, 30 October 2020 9:53 AM

To: Sandy Britain <Sandy.Britain@education.govt.nz>

Subject: Project Constellation workshop on Monday

Kia ora Sandy

Am sorry however 9(2)(a) is now not able to make the meeting on Monday as she has another meeting that she must attend. 9(2)(a) will be attending in 9(2)(a) place. Do you have some information on the workshop that I can pass onto Simon please?

Nga mihi

Nina

From: [Sandy Britain](#)
To: [Stuart McNaughton](#); 9(2)(a) ; [Ed Strafford](#)
Cc: 9(2)(a) ; [Chris Harwood](#)
Subject: Follow up on Microsoft Lighthouse Project Meeting
Date: Wednesday, 11 November 2020 9:56:00 am
Attachments: [Project Constellation - Operationalizing Responsible AI.pptx](#)
[Project Constellation Use Case 1 and Responsible AI.docx](#)

Kia ora koutou,

I'm just following up on the last meeting to discuss the Microsoft Lighthouse project opportunity. 9(2)(a), We have included you because 9(2)(a) indicated you would likely be joining this rōpū. Similarly [Chris](#), We know you weren't able to make the last meeting, but we see ELSA's involvement as crucial.

I expect that 9(2)(a) will fire us the notes from last week's meeting, as per her kind offer, but in the meantime my key takeaways from the meeting were:

- We understand that AI / machine learning and data science offer a variety of opportunities within the education system, but we do also have concerns about ethics, data sovereignty, data privacy, amongst others
- Rather than treat this opportunity in isolation, we need to address a wider question of the need for an AI strategy for the Ministry - and the Education Sector as a whole
- Any such strategy must honour Te Tiriti from the ground-up and be co-designed with Maori
- We would like to understand more about the Project Constellation opportunity that Microsoft are proposing to decide whether it would meet our aims

I'm sure I haven't captured everything so please do reply to this email if I have omitted a key bullet point you would like to add! (or if you don't think I have represented the discussion adequately)

In response to the last bullet point I followed up last week with 9(2)(a) 9(2)(a), who is the project lead on the Constellation Project to relay some of our concerns and to see how much flexibility there is within the project to tailor it to our own data, context and research interests.

Following that conversation 9(2)(a) has forwarded the attached documents on Project Constellation to provide a bit more context, which are worth a read. She has also offered to obtain the version of the agreement that other jurisdictions have signed which lays out the expectations on both sides and send it to us. I have requested that she does that, so that we can get a better idea of what we would be up for.

My thoughts following the conversation with 9(2)(a) were that whilst I was initially sceptical of the value of engaging in project constellation as it was presented to us in the initial meeting with 9(2)(a) there are some advantages that are worth thinking about in the context that we want to develop a broader AI strategy here in NZ Education:

- This is a project that is already up and running, offering the potential for us to get involved along with other jurisdictions to engage in a series of small constrained practical Proof of Concept type activities, that would help us to actually develop our strategy, as well as develop our own internal capabilities, knowledge and understanding of the specific areas that AI can benefit us in the NZ context as well as how to guard against misuse or unintended negative consequences.
- The other jurisdictions that are involved in Project Constellation round the globe (e.g. Finland) are asking the same types of questions and have similar concerns to us. Developing relationships and a community of practice with these other Governments also could help us to refine our own position

- There appears to be more flexibility in defining our own use cases / research topics within the project than I had originally thought, thus we could see it as a way to help us develop our own strategy.

Anyway those are just my thoughts from the last conversation.

Please do have a look at the resources provided. I will be away on leave now until the first week of December. So Ed will be coordinating activity and trying to keep things moving whilst I am away. I would like to suggest a further meeting in that first week of December if possible to see where we go from here.

In the meantime – Ed has pulled some content from Gartner which maybe of interest:

AI Lighthouse project

Goal: Partnering with MSFT on creating innovative products to be used to enrich MOE and students.
Challenge: Developing an AI strategy to run the products against to measure the value
Timeline: Have a draft strategy by the end of the year

[Artificial Intelligence Primer for 2020](#)
[Solution Path for Building an Effective Technical AI Strategy](#)
(Technical paper)
[Artificial Intelligence in Digital Business: Key Take-Aways for the Board](#)

Ed to reach out for ad hoc support

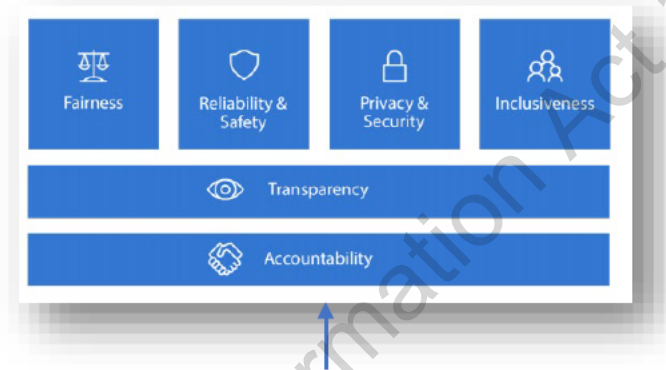
Nga mihi nui,
Sandy

Sandy Britain | Enterprise Architect | ICT SPA
Mobile 9(2)(a)

Project Constellation

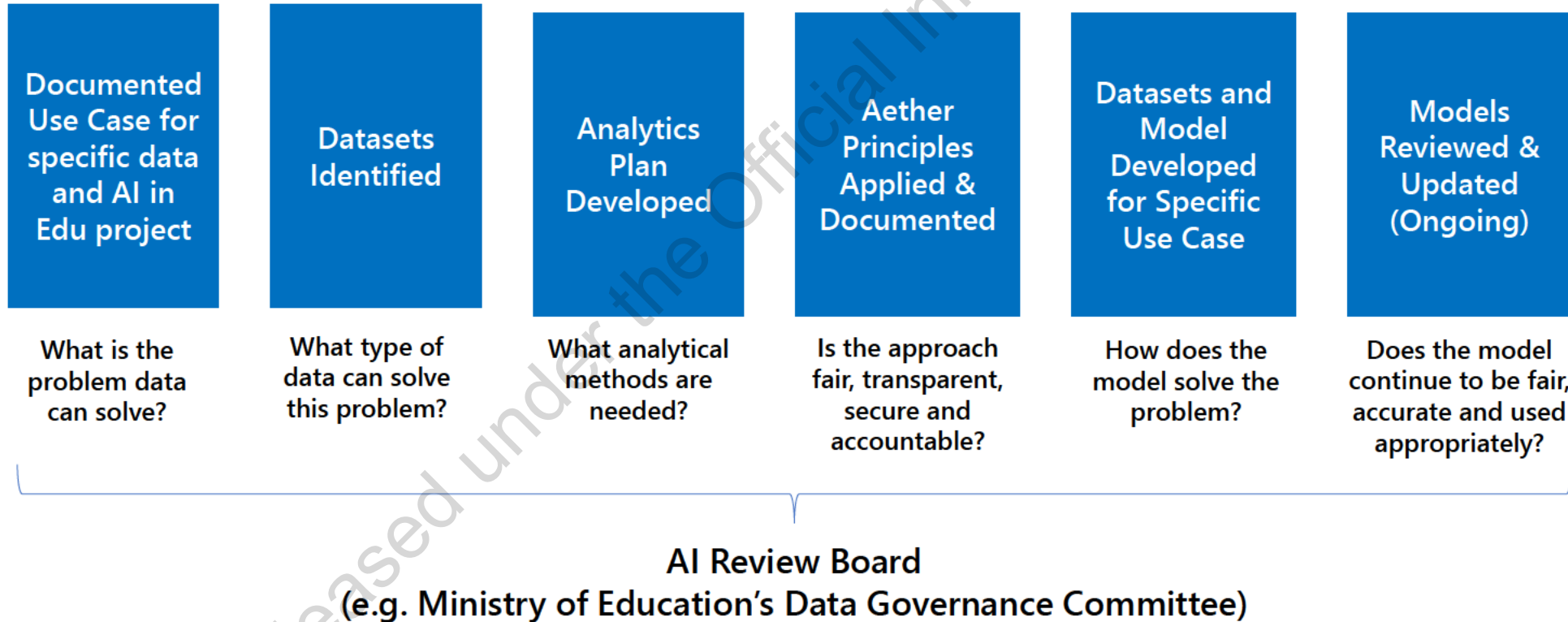
Operationalizing Responsible AI

Responsible Analytics and AI Process for Edu



[Microsoft Responsible AI Principles](#)

Document each Use Case, operationalizing Responsible AI Principles



Use Case #1 For Project Constellation

Document each Use Case, operationalizing Responsible AI Principles

Microsoft Education: Open Analytics and AI

Project Constellation: Use Case #1

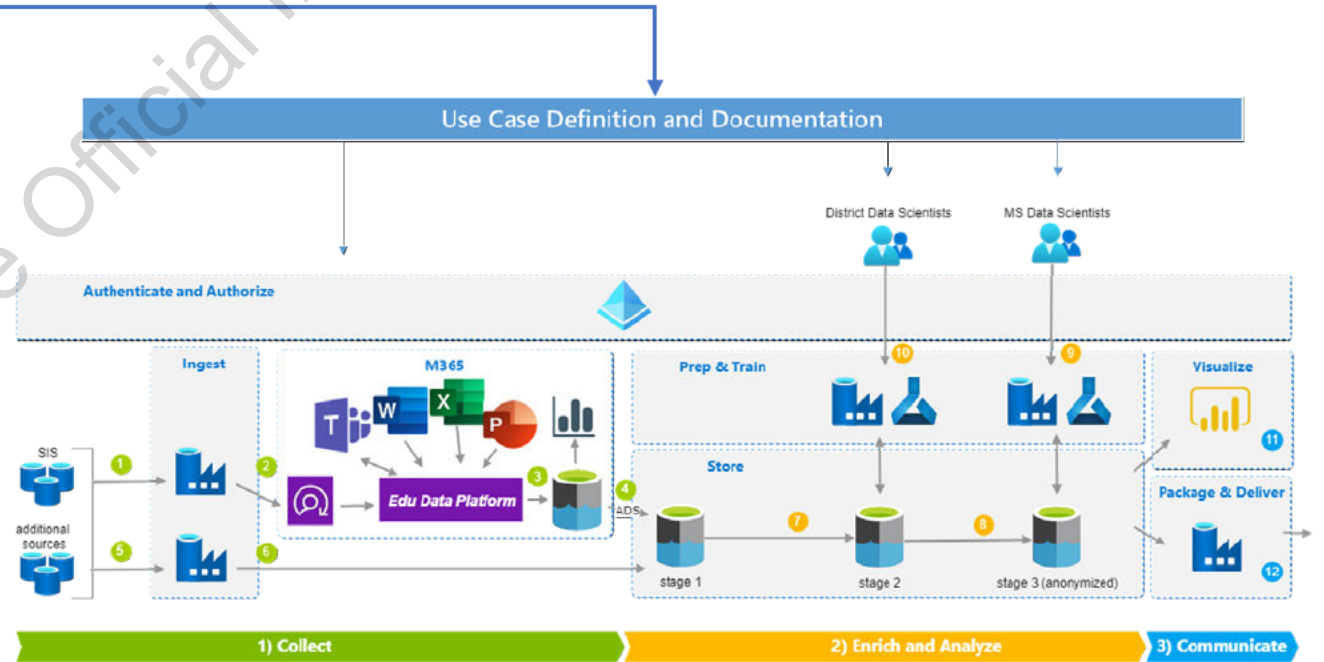
What problems are we trying to solve with this use case?

Remote and hybrid learning have exploded during the COVID19 pandemic, but not much is known about how primary and secondary students learn effectively in digital learning environments. There also is a strong need to better understand how to support student's well-being as the process of schooling becomes increasingly digitized.

This use case is designed to develop measures of student engagement and well-being in digital learning environments and analyze relationships between digital learning practices and processes on one hand, and learning outcomes on the other. The hypothesis is that different patterns of digital engagement and socio-digital collaboration for remote and hybrid learning may be optimal for different types of students, different subject areas, or other factors. If we can identify the patterns of digital engagement and socio-digital collaboration that predict learning outcomes and students' well-being, we can better support education systems globally in improving different modalities of learning.

This use case will be pursued through analytics with each Project Constellation education system partner separately, using data that is unique to each education system and applying similar analytical methods and models in these different system contexts. As insights are developed on specific patterns of digital engagement that support specific outcomes, education system partners will develop, apply, and continuously test supports and new interventions based on those insights, and use analytics to inform decisions that drive continuous progress throughout the system.

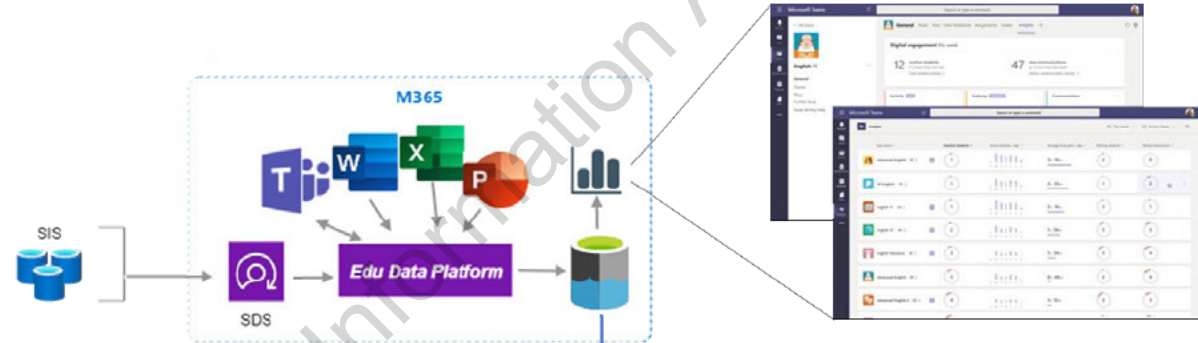
- Open Edu Analytics Solution Reference Architecture provides data environment for analyzing specific use cases.
- Different use cases will use different datasets in separate stores/containers, with data access specific to that use case. Use case documentation is needed for each specific use case to define data parameters and access needed.
- In Project Constellation, Microsoft and Partners pursue shared use cases exploring patterns of digital engagement, learning outcomes and student well-being.



Project Constellation Workstreams 1 and 2

Workstream 1

Education Insights (part of O365 subscription)

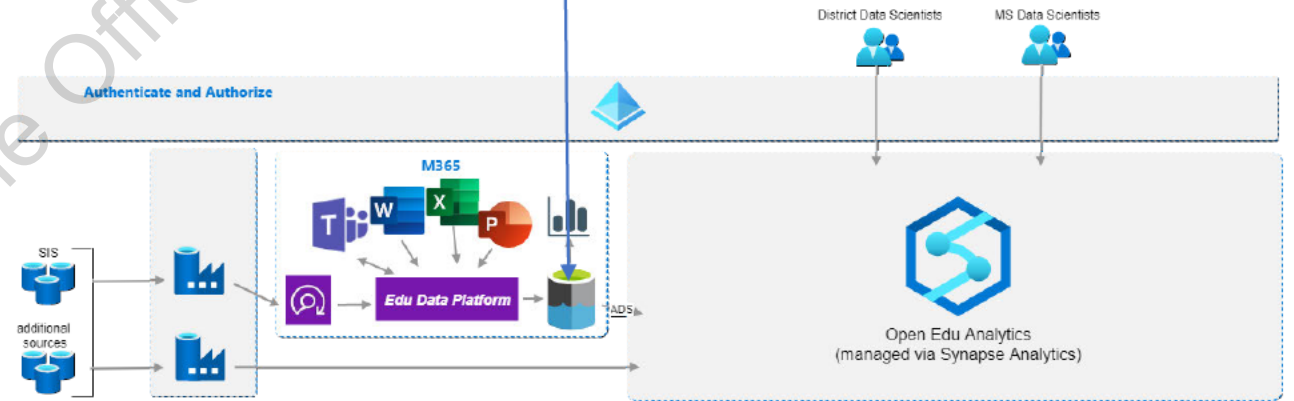


Workstream 2 Open Edu Analytics Solution Reference Architecture

Hosted on Azure Services in local data centers

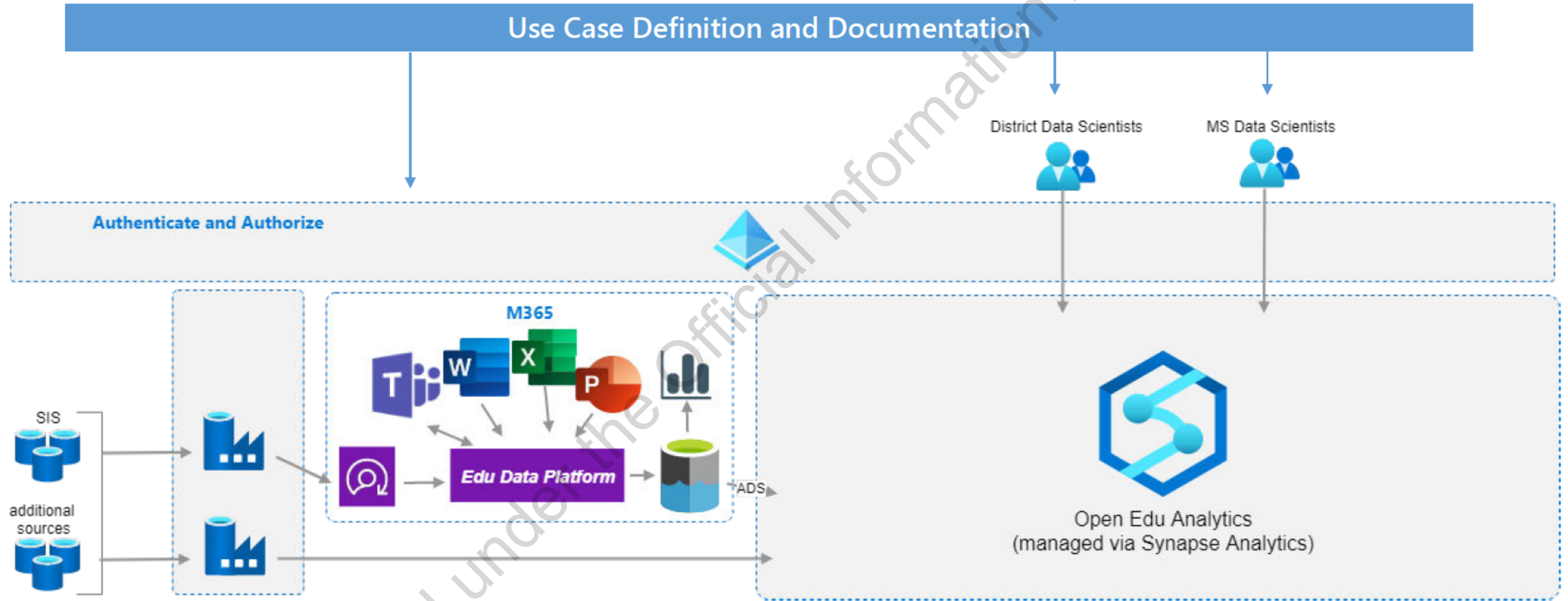
Data security, privacy and access controlled by Customer

Microsoft and University data scientists access controlled by Customer

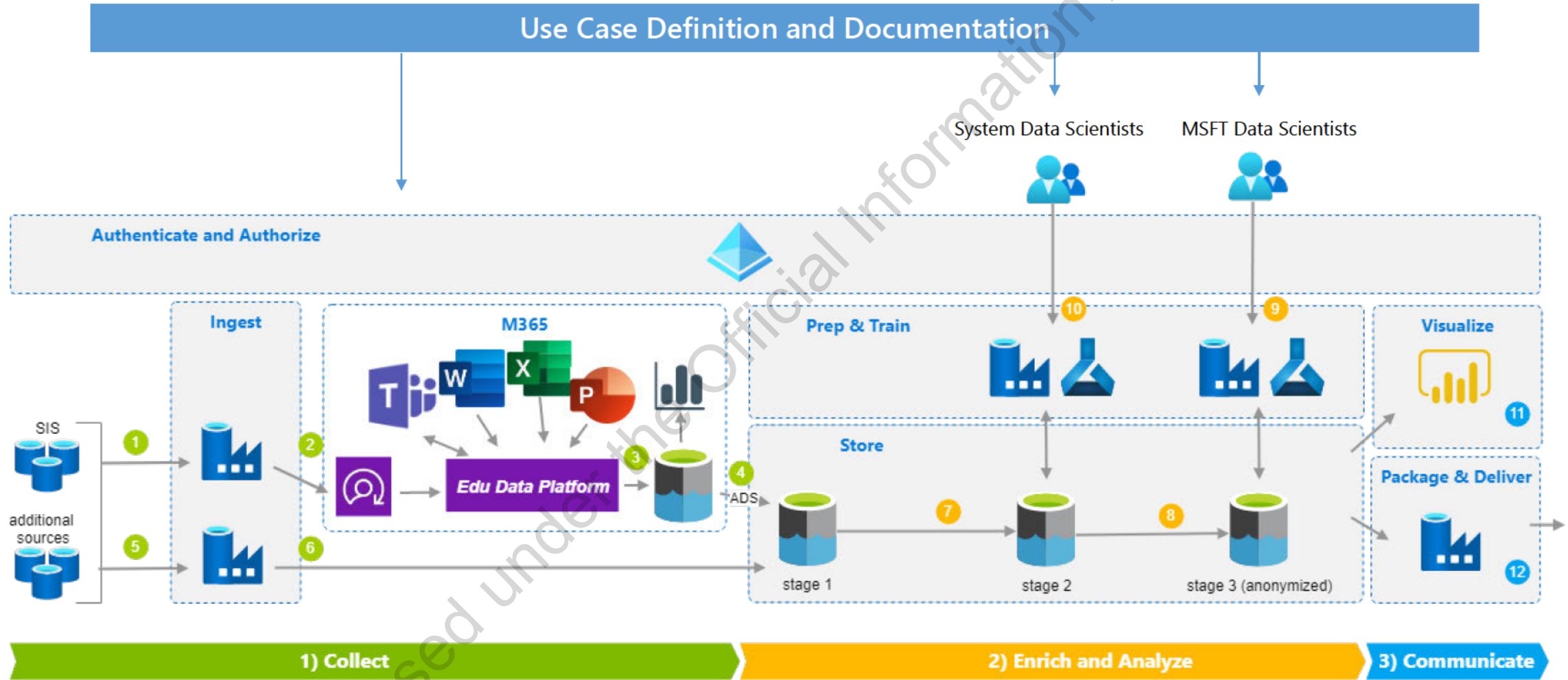


Released under the Official Information Act 1982

Open Edu Analytics Solution Reference Architecture



Open Edu Analytics Solution Reference Architecture



Project Constellation: Use Case #1

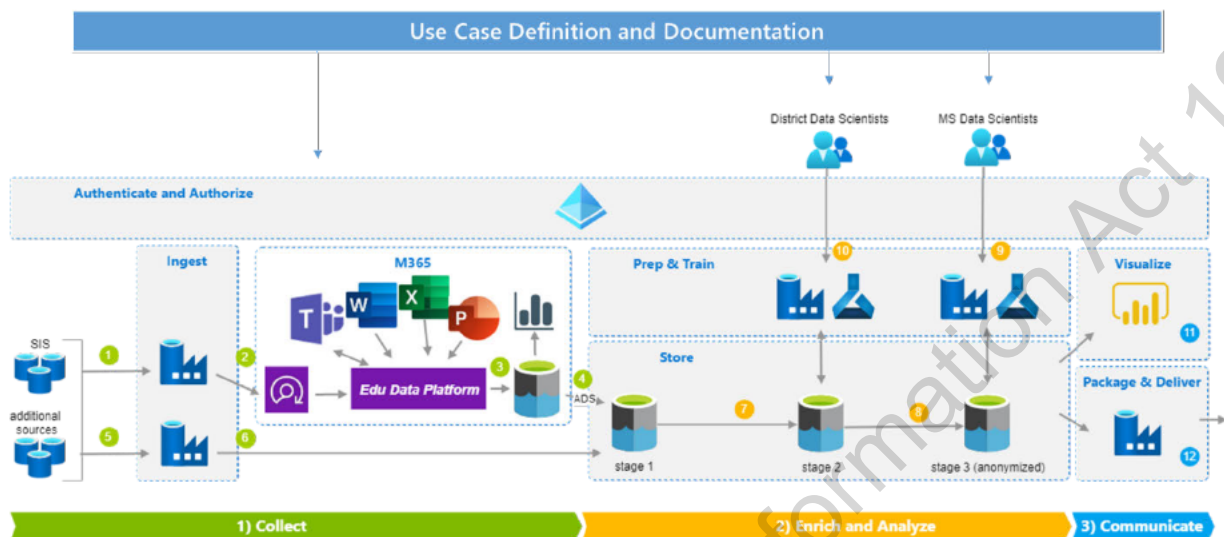
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This Use Case Documentation is informed by the principles of the Ethical Use of AI in Education Framework from the [Microsoft Aether](#) Committee. The Use Case Definition guides how analytics and AI will be conducted within each Partner's data environment.



Overall Project Context and Description

In responding to the global COVID19 pandemic, Microsoft Education realized that education systems have an urgent need for data and insights to improve remote and hybrid learning. As a result, we developed Project Constellation, an international research partnership to collaboratively develop analytics and insights on learning within and beyond digital ecosystems. We have invited a small number of large education systems already working with Microsoft Education to participate in a special research collaboration, and those systems are the organizations that will pursue this shared Use Case.

This collaboration includes:

1. Microsoft's expertise in data security, privacy and governance, and the ethical use of AI.
2. Education system analytics that extend the value of existing deployments of Microsoft's O365 platform and access to education-specific assets for using Azure analytics and AI services.
3. Ability to develop data and AI expertise in the education systems, supported by Microsoft and the partnership
4. Opportunity to be part of a global thought leadership community in using data and AI in education responsibly.

Education systems need digital engagement data to be combined with other types of education data such as assessments, surveys, demographics, and other data to develop insights into what is working or not working to engage students in learning during remote and hybrid learning and support students' well-being.

This project will use powerful cloud-based data architectures and AI services from Microsoft Azure. Each Constellation system partner will deploy and manage their data analytics within their own Azure subscriptions, using a common reference architecture for education analytics and AI in Azure that is being developed by the Microsoft Education team.

Project Constellation partners will be supported by Microsoft Education to set up this architecture and develop analytics on shared research questions. Developing the data science and AI skills of each education system partner will be part of this project, and partners are encouraged to invite local university research partners to join in the analytics phase of work.

How does this use case align with the needs of learners?

This Project Constellation Use Case #1 is designed to support education systems in identifying the best ways to keep all learners in their schools productively engaged in learning through analyzing combined digital engagement log data and learning outcome data. The more education systems, schools and teachers have visibility into how to effectively support continuous learning and student well-being in digital environments, the more students can continue to learn.

Use Case Audiences

Education System Leaders:

1. **Predictive models** that show which patterns of digital engagement and socio-digital collaboration increase learning outcomes and student well-being (e.g., by subject or learning standards).
2. **Data dashboards** on digital engagement and socio-digital collaboration patterns: system leaders will use data dashboards to see which schools, teachers and students are using effective practices for digital learning and well-being, and which need supports to encourage these practices. The intent is to apply data to determine how to share best practices for digital engagement and social-digital collaboration, and who to share those practices with (e.g., through communications, professional learning for teachers, or automated personalized triggers in applications).

School Leaders:

- 1) **Data dashboards:** Enable school leaders to see patterns of digital engagement and socio-digital collaboration in their school, identify teachers and students who could shift to more effective patterns, and provide supports for those shifts (e.g. sharing best practices, through communications, professional learning for teachers, or automated personalized triggers in applications).

Teachers:

- 1) **Learning dashboards:** Enable teachers to see patterns of digital engagement and socio-digital collaboration for their classes and subjects (for example, using specific apps or engagement practices to improve learning and ensure student well-being through such practices as monitoring student workload).

Datasets Description

What data will be used for this use case?

- 1) Digital engagement and socio-digital collaboration data from a school or system's O365 app use or from other digital learning applications (e.g., LMS, subject specific apps). The O365 data will be exported from the education system's O365 tenant (subscription) to their Azure environment via Azure Data Share.
- 2) Student Information System that provides data on individuals' demographics (where collected and available), attendance, and marks or grades.
- 3) Assessment or Learning Outcome Data from education systems.
- 4) Students' self-assessments (dispositional data).

Descriptions of datasets 2, 3 and 4 to be documented by each Constellation system partner.

What are the constraints of these datasets for this specific use case?

- 1) O365 app use is only one source of digital engagement data. Teachers and students use many different applications for learning, so the O365 app use data does not represent the full range of digital engagement of any student or teacher. Each education system partner will be asked to add additional log data from other applications into their Azure data lakes.
- 2) The O365 app use data may not be representative of the entire student or teacher population, especially during remote learning, as some students and teachers may not have continuous home or out of school access to the digital learning environments if they do not have connected devices outside of the school.
- 3) It is expected that the type of data provided by each Constellation Partners' student information systems will be very different from that of other Partners. This will impose barriers to comparability of models and patterns between different Partners' findings.

- 4) Learning outcome assessment data may provide limited insights into the range of learning taking place.
- 5) Not all education system partners will have representative data on student well-being.

Fairness Principle

AI systems should treat all people fairly

Who is most likely to be at risk of experiencing harms from this use case? For example, would any groups (immigrants, rural students) or subpopulations (gender, language group) face adverse consequences from the AI?

Different student subgroups will exist in each education system participating in Project Constellation. Those subgroups may be related to different "protected variables" such as language, ethnicity, geographic location, income level, gender, religion, or country of origin.

The intention of this use case is to incorporate such protected variable data to ensure that all student subgroups are fairly represented in the analytics. One of the main purposes of the project is to provide visibility into equity of each subgroup's digital engagement, learning outcome, and student well-being patterns.

Each Project Constellation partner will be asked to define the set of 'protected variables' specific to their education system.

Planned Mitigations:

- 1) The model training data will include representative samples of all groups and subpopulations.
- 2) We will test the system for fairness both during training stage and to continuously evaluate it after deployment (e.g., examining false positives and false negatives by group or subpopulation)
 - a. For each defined "protected variable"
 - i. Partial dependence plots (e.g., protected variable against model accuracy)
 - ii. Odds ratio of model confidence on raw data vs. perturbing / masking the data to change the protected variable.

Are these groups and subpopulations clearly labelled in the dataset?

Protected variable data will be provided by the Student Information System dataset from each education system. Data labels for protected variables will be requested as part of developing the data dictionary for each system's datasets.

Reliability and Safety Principle

AI systems should perform reliably and safely

What are possible risks faced by students or teachers from the analytics of this use case?

- 1) Risk 1: student or teacher subgroups are excluded from the analytics or their "protected variable" identities are masked in such a way that patterns of digital engagement and learning outcomes are not clearly related to subgroup-related factors (e.g., discriminatory patterns not identified).
- 2) Risk 2: Specific student or teacher subgroups are identified in the analysis but excluded from the subsequent solutions provided by the education systems to improve engagement, learning outcomes or student well-being.
- 3) Dataset limitations (e.g., missing log data from other digital learning applications used by students and teachers) decreases the reliability of the analytics models developed, and do not provide an accurate representation of patterns of digital engagement, learning outcomes or student well-being.

Planned Mitigations:

- 1) The data on digital engagement from O365 will be matched to the total population of teachers and students to see if specific groups or subpopulations (where that data is available) are not fully represented in the combined data.

Transparency Principle

AI systems should be understandable

What steps will the analytics or AI process include?

Project Constellation Use Case 1 will take a 2 phased approach:

- 1) Phase 1: Dataset exploration of digital engagement patterns, learning outcomes and student well-being.
 - 2) Phase 2: Model building to predict learning outcomes and student well-being based on patterns of digital engagement.
- 1) Phase 1: Development of PowerBI Dashboards with each Constellation partner. Partners will be able to modify and augment these dashboards according to their own datasets (e.g., different learning outcome data sources and types). The goals of providing these dashboards are
 - a. to enable partners to explore data related to the shared research.

- b. to enable partners to use initial data sets quickly and use early dashboards to get feedback from stakeholders within their education systems on how they would interpret and use the data as visualized.
- 2) Phase 2: Model building to predict learning outcomes and student well-being based on patterns of digital engagement. During this phase, data science teams will develop both traditional statistical regression models, cluster analysis, and use machine learning tools and techniques. This document will be updated with specifics of what approaches are used as those analyses are undertaken.

Who will develop the analytics or models?

Each Constellation education system partner will have its own data science team. These may include full time employees in the partner organizations, university data science teams that a partner has included in the project, or data science consultants employed by the partner.

In addition, Microsoft data scientists and Microsoft sub-contractor data scientists will be granted access to anonymized datasets within partners' Azure environments (at partners' permission, granted through a legal agreement signed to participate in the research project). These data scientists will develop analytics and models within that anonymized data environment. Some Constellation partners may choose not to allow Microsoft data scientists partners access to their data environments, and simply use the same approaches conducted by their own teams.

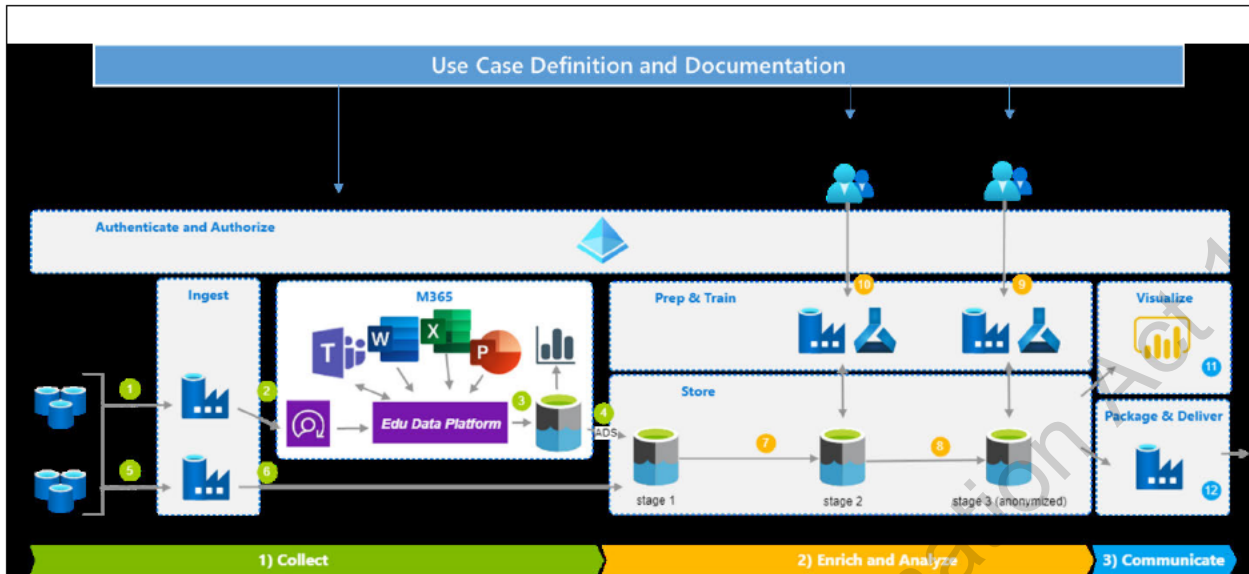
Privacy and Security

AI systems should be secure and respect privacy

How will access to data be secured and protected in the data environment?

Ensuring an education system's data is secure and private is extremely important to Project Constellation, and there are two initial ways the project addresses this.

The first method of ensuring data security is through systems' managing access to the Azure data environment through [Azure Active Directory](#) (the "Authenticate and Authorize" layer in the architecture diagram below). Each system partner will be shown how to set up role-based security groups that provide access only to individuals approved by the partner to specific types of data.



The second method for ensuring security and privacy is through anonymizing data over which certain analytics are performed, represented in the above chart in the stage 3 data lake. Separate data lakes with permissions to specific use cases will be developed, granting access to partner-approved data scientists based on the needs of that use case.

Finally, the Azure services and Education Analytics and AI reference architecture on which the use case relies, have a series of security, privacy and data governance controls: <https://azure.microsoft.com/en-us/overview/trusted-cloud/privacy/>.

Does the dataset contain any personally identifiable information (PII) and how will that data be protected and governed?

Student and teacher data from each partner’s student information system will include PII such as name, email, address and other personal details.

Data subjects do have the right to be forgotten (GDPR) in the O365 dataset. The education systems’ data (Student Information Systems, learning outcome and well-being data) generally belongs to the education systems and governance is determined by local laws and policies.

For this Constellation use case, no content information (e.g., personal essay responses, discussion chat text, images, or video content) will be used.

Will data from young persons (e.g., “minors”) be included in the dataset?

Yes, Project Constellation's first use case for analytics will be implemented with education systems serving populations of primary and secondary school students (ages 6 to 18 generally).

Accountability

People should be accountable for AI systems

Who is responsible for reviewing the Use Case documentation and ensuring that the implementation meets responsible AI principles?

It is recommended that each education system partner in Project Constellation set up an Analytics and AI Review Committee that is responsible for 1) reviewing and questioning the Use Case documentation; 2) ensuring the fairness of each use case (e.g., checking the representativeness of data used vs. known data about student and teacher populations); 3) checking the data security and privacy protocols of datasets; 4) monitoring the ongoing accuracy and updating of models.

This committee should be independent of the data teams developing the analytics, and should be comprised of different types of stakeholders, potentially including representatives from all groups who are data subjects relevant to the use case.

Because these Committees may not exist yet in most Constellation partner organizations, or have clearly defined procedures, the Project Constellation partnership will collaboratively share responsibility for accountability practices for this Use Case. The partnership will be augmented by external advisors to Project Constellation, such as learning analytics and data privacy experts, members of Microsoft's Aether committee for Responsible AI, and leaders from international education policy organizations (e.g., OECD and UNESCO).

How will stakeholders and end users be trained on the appropriate use of the system?

Data and analytics can only have a positive impact on learning and student well-being if the use case they are intended for is understood by all stakeholders, and interpretations and resulting interventions are appropriate to the data limitations specific to the use case.

For Project Constellation partners, the interpretation of the analytics will be a collaborative and iterative process. Dashboards and models will be reviewed with different stakeholder groups (e.g., school leaders, teachers, students, parents) by each system partner to capture feedback on how initial dashboards and models are perceived and how they might be interpreted and used. That feedback will be used to iterate on data visualizations and models until the system arrives at a shared understanding of the appropriate use of the analytics.

From: 9(2)(a)
To: [Sandy Britain](#)
Cc: 9(2)(a)
Subject: RE: Lighthouse Project Constellation update
Date: Tuesday, 15 December 2020 5:32:31 pm
Attachments: [image001.png](#)

Thanks for the update and the feedback Sandy – a real shame, but completely understand the rational and reasoning.

I've sent the email to 9(2)(a)

Let me know what you need from me 9(2)(a) for the ToR.

Thanks again.

9(2)(a)

From: Sandy Britain <Sandy.Britain@education.govt.nz>

Sent: Tuesday, 15 December 2020 4:49 pm

To: 9(2)(a)

Subject: [EXTERNAL] RE: Lighthouse Project Constellation update

H 9(2)(a)

Apologies I meant to get back to you yesterday and the day ran away with me. So we had 9(2)(a) and Chris Harwood at the meeting on Friday. Unfortunately Stuart McNaughton and the representative from Maori Education were unable to make it.

Stuart Wakefield has asked me to put together a Terms of Reference for the Lighthouse project work (timeline before Christmas).

The meeting on Friday was to discuss:

1. The TOR
2. What our principal use case for the work will be
3. Whether Project Constellation is the right vehicle for us

Wendy put forward a strong case that the Project and any work we do in the AI space should be embedded within a Trust model between the Ministry and the Education Sector which adheres closely to the DPUP (cross-agency data protection and use policy). The use case will come from ELSA and received some discussion but more work is needed. The feedback I had was that the current research question of Project Constellation was not aligned with what we would want to look at, and there were concerns that it would not align with the trust model we need to put in place with the sector. So the upshot is we have more work we need to do, but the feeling is that project constellation would not be the right vehicle for the Ministry at this time. I know that will be disappointing for 9(2)(a) and please pass on my thanks for her work in making the opportunity available to us

My aim now is to get the Terms of Reference drafted and agreed internally which provides us with an agreed framework to move forward in the new year. I should add that there is genuine enthusiasm for the Lighthouse opportunity as well as caution around the use of education system data in this context, so I have no doubt we will find a compelling application for the work in the new year and I will keep driving it internally. I will seek to be able to share the draft TOR with you as soon as possible in any case.

Do let me know if you have any questions and feel free to give me a call if so,

Kind regards,

Sandy

From: [Sandy Britain](#)
To: [Sandy Britain](#)
Subject: Re: tor
Date: Wednesday, 6 January 2021 4:53:30 pm
Attachments: [image001.png](#)
[Terms of Reference - Lighthouse.docx](#)

here

On Mon, Dec 21, 2020 at 8:31 AM Sandy Britain <Sandy.Britain@education.govt.nz> wrote:

https://conversation-space.s3-ap-southeast-2.amazonaws.com/ELS+0324+CPA+Final+MAG+report_06+includes+Ed+Strategy+vision.pdf

<https://dpup.swa.govt.nz/assets/Documents/952930a100/data-protection-and-use-policy.pdf>

[Newsletter \(education.vic.gov.au\)](#)

User case: Understanding progression and learner progress in mathematics / numeracy

Initial 'steering group' members: Sandy, Wendy, Rohan Wong, Glenys Hauiti-Parapara, Stuart McNaughton (Note: I have not discussed this with the latter three)

The Ministry's curriculum team is seeking to refresh *The New Zealand Curriculum* to ensure that teachers, students and their whānau (families) know and understand what learning matters and that progress is understood so that learning is not left to chance.

We have of tools to support:

- assessment (e.g. e-asTTle)
- judgments about progress and achievement (eg The Progress and Achievement Consistency Tool – PaCT).

E-asTTle provides some information for students and teachers to support planning for next steps in learning. The frameworks underpinning this have not been reviewed for some time. The PaCT has provides limited predictive ability about a student's likely progress. This functionality is rudimentary.

We are seeking to develop a research question that will explore the opportunities that AI could advance around understanding and supporting positive learning trajectories for students in mathematics/ numeracy using data from e-AsTTle and the PaCT.

We would use the findings to understand how to improve our tools so they support more successful learning across the schooling pathway for more students. We are particularly interested in being able to do this for students currently underserved by our education system.

We will need to ensure the use of data in this project supports the work currently underway to support the use of data in the education system in trusted ways.

Chris Harwood | Senior Manager | Early Learning and Student Achievement
Mobile 9(2)(a) [REDACTED]
33 Bowen Street, Wellington

education.govt.nz

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Terms of Reference – Education Lighthouse Project, 2021

Date: 7/01/2021

Author: Sandy Britain

Version: 0.1 - DRAFT

1. About this Document

This Terms of Reference document aims to formalize the process and capture information about the work to date in order to progress the Lighthouse project opportunity between the Ministry of Education and Microsoft.

It describes the background to the opportunity as well as the framework, processes, key roles, and working arrangements for meeting the project objectives.

2. Background to the Education Lighthouse Project.

2.1 Origins

The provision for 'Lighthouse' projects is made under the Advancing Digital Societies MOU agreed between the NZ Government (GCDO) and Microsoft following the visit of Microsoft VP, Brad Smith to NZ in 2019, and the creation of a Microsoft Data Centre in NZ.

2.2 Objectives

Under the MOU, the aim of the Lighthouse project concept is to explore innovative projects in NZ. Whilst it is not made explicit in the MOU, the technical capability for the projects is provided by Microsoft's investment in AI / data science underpinned by Azure cloud services. Microsoft have signaled a strategic direction for the use of Azure and AI for a number of years with their AI for Good and AI for Earth programmes internationally.

More specifically the MOU outlines the requirements for a candidate Lighthouse project as being one which:

- is important to the Government, the Lead Agency and to Microsoft;
- both parties have the capability and expertise, and the resources to allocate, to support; and
- is transformational and innovative in the way in which it can address important issues, and deliver benefits, for New Zealand and New Zealanders.

The aim of the opportunity is not to use existing commodity AI services on Azure, such as Cognitive Services to address problems (or problem variants) already solved elsewhere. The idea is more to select a problem of national significance, and then to use technology in innovative ways to attempt to solve it.

2.3 MOE and Microsoft Sponsorship

The business sponsor of the Lighthouse opportunity within Education is the Ministry of Education Chief Digital Officer – Stuart Wakefield. The Microsoft NZ sponsor is NZ National Technology Officer - 9(2)(a) [REDACTED].

2.4 Work undertaken and key decisions to date

- Stuart Wakefield has requested that Sandy Britain manage the work programme on behalf of the Ministry, supported by Ed Strafford.
- An internal MoE project steering group has been convened and conducted initial meetings. This terms of reference covers the future activities of that group

- A proposal was put forward by Microsoft to use the Lighthouse project to join an international education initiative being run by Microsoft with a number of other jurisdictions, known as Project Constellation. It was decided by the steering group that this opportunity was not a good fit with MoE's objectives at the current time, and the offer was declined.
- A proposed framework and draft principles for the project, as well as a candidate use case for the project were proposed at the last meeting of the group. These are outlined in sections 4 and 5 below.

3. Lighthouse Project Steering Group

3.1 Purpose of the Group

The purpose of the steering group is to ensure that the necessary stakeholder groups and concerns within the Ministry are represented in the process of selection and definition of the Lighthouse project. This group will continue to monitor the project through its lifespan in a governance role to ensure that objectives are met and that the principles are adhered to.

3.2 Term

The term of this Terms of Reference is from the 5 January 2021 and will remain active until 24 December 2021, or the end of the Lighthouse project as mutually agreed by the members of the steering group if that is sooner. The terms of reference will be reviewed prior to the end date and the term will be extended if necessary

3.3 Membership

The membership of the group is as follows:

- a) Sandy Britain – Enterprise Architect, ICT SPA (Chair)
- b) Ed Stafford – Senior Strategic Advisor, ICT SPA (Secretary)
- c) 9(2)(a) – Chief Data Steward, EDK
- d) Chris Harwood – Senior Manager, ELSA
- e) 9(2)(a) – Project Manager, ELSA, Te Reo Maori
- f) 9(2)(a) - Senior Manager, ELSA, Te Reo Maori
- g) Stuart McNaughton – Chief Education Scientific Advisor, EDK

3.4 Roles and Responsibilities

The key roles of steering group members will be firstly to contribute to the definition and design of the candidate project to help ensure that it meets the stated objectives and adheres to the principles, and secondly to provide governance oversight of the project once it is in progress.

Individual steering group members will commit to:

- Attending all meetings
- Openly contributing their perspective in meetings
- Reviewing and commenting on any documentation produced by the project
- Contributing to decision-making by the group by voting when required to do so

3.5 Meetings

Meetings will be held bi-weekly during the project definition phase in order to maintain momentum, once the project has been defined and an agreement has been signed with Microsoft the frequency of meetings may be reduced to monthly.

Meetings will be no more than 90 minutes in duration and will take place both in person and over Zoom.

Stuart Wakefield (as Ministry Business Owner of the project) will be invited to all meetings. A decision will be made on the invitation of Microsoft representatives to the meetings once an agreement has been signed.

All meetings will be chaired by Sandy Britain as project lead. Ed Strafford will chair in his absence.

A meeting quorum will be 5 members of the steering group.

Decisions are made by consensus (i.e. members are satisfied with the decision even though it may not be their first choice). If not possible, chair makes final decision.

Meeting agendas minutes will be provided by Sandy Britain / Ed Strafford, this includes:

- preparing agendas and supporting papers
- preparing meeting notes and information.

3.6 Amendment, Modification or Variation

These Terms of Reference may be amended, varied or modified by agreement of the steering group members

4. Operational Framework and Principles Governing the Project

The operational framework for the Lighthouse project, through testing and refinement in this instance, will provide the foundations for a broader Ministry of Education Artificial Intelligence (AI) and Data Science strategy to be developed.

The key documents underpinning the draft operational framework outlined here are:

1. The Data Protection and Use Policy (2019) – Social Investment Agency¹
2. The Report of the Curriculum, Progress and Achievement Ministerial Advisory Group (2019)²

Both documents emphasise the need for a *Trust-based model* to underpin the use of data to advance social sector goals in general and in this case specifically within Education. The principle of Trust sits at the centre of the operational framework proposed here. Any deployment of AI, machine learning, or other data mining technologies in Education must first and foremost comply with the Trust principles outlined in the Data Protection and Use Policy (DPUP) and the Report of the Curriculum, Progress and Achievement Ministerial Advisory Group (CPA-MAG).

The DPUP further sets out guidelines for acceptable use of Data that form part of the operational framework for the Lighthouse project work

Alongside Trust sits the dual principles of Equity and Excellence for all NZ Akonga. These are cornerstone principles of the Ministry of Education, reflected in the Statement of Intent and other key strategic documents that help to further guide the selection of an appropriate project for the Lighthouse project.

The CPA-MAG report promotes the need for a commitment to being a “System that Learns”. This systems thinking concept articulates the importance of informational feedback loops to allow the system to improve performance based on experience. This is a powerful concept in thinking about the role of Data and AI technologies in creating a ‘system that learns’, therefore it is useful to position this concept within the framework and principles guiding the Lighthouse projects.

¹ <https://dpup.swa.govt.nz/assets/Documents/952930a100/data-protection-and-use-policy.pdf>

² https://conversation-space.s3-ap-southeast-1.amazonaws.com/ELS+0324+CPA+Final+MAG+report_06+includes+Ed+Strategy+vision.pdf

The final operational framework and principles will be agreed by the steering group

5. Proposed Use Case – ELSA

The Ministry's curriculum team is seeking to refresh *The New Zealand Curriculum* to ensure that teachers, students and their whānau (families) know and understand what learning matters and that progress is understood so that learning is not left to chance.

We have tools to support:

- assessment (e.g. e-asTTle)
- judgments about progress and achievement (eg The Progress and Achievement Consistency Tool – PaCT).

E-asTTle provides some information for students and teachers to support planning for next steps in learning. The frameworks underpinning this have not been reviewed for some time. The PaCT provides limited predictive ability about a student's likely progress. This functionality is rudimentary.

For this Lighthouse project we are seeking to develop a research question that will explore the opportunities that AI could advance around understanding and supporting positive learning trajectories for students in mathematics/ numeracy using data from e-AsTTle and the PaCT.

We would use the findings to understand how to improve our tools so they support more successful learning across the schooling pathway for more students. We are particularly interested in being able to do this for students currently underserved by our education system.

We will need to ensure the use of data in this project supports the work currently underway to support the use of data in the education system in trusted ways.

Released under the Official Information Act 1982

From: [Sandy Britain](#)
To: 9(2)(a); [Ed Strafford](#); [Wendy Hamilton](#); [Chris Harwood](#); [Stuart McNaughton](#)
Subject: Follow up and notes from AI Lighthouse Steering Group Meeting yesterday
Date: Wednesday, 17 March 2021 2:47:00 pm
Attachments: [Terms of Reference - LighthouseV0.9.docx](#)

Kia ora koutou,

These are rather brief informal minutes from yesterday's meeting. I have tried to capture the main points discussed and decisions reached on next steps. Please feel free to correct by email. I know I have missed things in this summary, so please do fire back a line of anything you want to make sure is captured either in the TOR or for discussion in the workshop.

Lighthouse Project Steering Group Meeting 16/03/21

Attendees: Sandy Britain (Acting Chair), Ed Strafford, 9(2)(a), Chris Harwood

Apologies: 9(2)(a), Stuart McNaughton

The main agenda items for this meeting were:

- i) to complete review of the draft terms of reference with a view to producing a final draft version for approval
- ii) to agree next steps in defining the operational framework and principles
- iii) to begin refining the project concept and begin drafting a high-level plan

The meeting began with introductions and an overview of the context and discussions to date for the benefit of Glenys who joined the group for the first time.

We then continued discussing the terms of reference. In response to the feedback of the group I have made some changes and included a 'final draft 0.9' attached to this email.

One item I meant to raise was the question of chair for the group. I am happy to keep driving it for the time being, but I may not be the most appropriate chair going forwards. We need to make a decision on that.

Also discussed was the importance of ensuring that group members relay information on the project back to the work teams they represent in order to ensure that stakeholder concerns can be raised and met effectively and there are no surprises. (this could form part of the operational framework to be drawn up following the workshop)

ACTION: (ALL) Please have a look and either send back requested changes or your approval of these TOR before March 31.

In relation to agenda items ii) and iii), as a next step Glenys proposed a workshop (minimum 1 hour ideally more) in the next two weeks to develop a shared understanding of the project (such as: goals, opportunities, and constraints, how we work together), to develop the principles underpinning the project, and to start work on the operational framework and plan

ACTION: (SB) try to find a workshop date/time that works, liaise with Ed, Glenys and Rohan on a structure for that session.

Suggested topics based on those raised or discussed so far:

1. Principles for the Trust Model, Operational framework and Project
2. Goals -what do we want to achieve?
3. Maori Data Sovereignty
4. Avoiding Vendor Lock-in by only working with Microsoft
5. Ensuring equity in richness of data-sets for all Akonga(e.g. not just E-Asttle)
6. ...??

Nga mihi

Sandy

Terms of Reference – Education Lighthouse Project, 2021

Date: 16/03/2021

Author: Sandy Britain

Version: 0.9 – FINAL DRAFT TO BE APPROVED

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Under the MOU, the aim of the Lighthouse project concept is to explore innovative projects in NZ. Whilst it is not made explicit in the MOU, the technical capability for the projects is provided by Microsoft's investment in AI / data science underpinned by Azure cloud services. Microsoft have signaled a strategic direction for the use of Azure Cloud and AI infrastructure and frameworks with their AI for Good and AI for Earth programmes internationally.

More specifically the MOU outlines the requirements for a candidate Lighthouse project as being one which:

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- is transformational and innovative in the way in which it can address important issues, and deliver benefits, for New Zealand and New Zealanders.

The aim of the opportunity is not to use existing commodity AI services on Azure, such as Cognitive Services to address problems (or problem variants) already solved elsewhere. The idea is more to select a problem of national significance, and then to use technology in innovative ways to attempt to solve it.

2.3 MOE and Microsoft Sponsorship

The sponsors of the Lighthouse opportunity within Education are Ellen MacGregor-Reid (Deputy Secretary of ELSA) and the Chief Digital Officer – Stuart Wakefield. The Microsoft NZ sponsor is NZ National Technology Officer - 9(2)(a)

2.4 Work undertaken and key decisions to date

- Stuart Wakefield has requested that Sandy Britain manage the project on behalf of the Ministry, supported by Ed Strafford.
- An internal MoE project steering group has been convened and conducted initial meetings. This terms of reference covers the future activities of that group

- A proposal was put forward by Microsoft to use the Lighthouse project to join an international education initiative being run by Microsoft with a number of other jurisdictions, known as Project Constellation. It was decided by the steering group that this opportunity was not a good fit with MoE's objectives at the current time, and the offer was declined.
- A data-use framework and a candidate initiative for the project were proposed at the last meeting of the group. These are outlined in sections 4 and 5 below.

3. Lighthouse Project Steering Group

3.1 Purpose of the Group

The purpose of the steering group is to ensure that the necessary stakeholder groups and concerns within the Ministry are represented in the process of selection and definition of the Lighthouse project. This group will continue to monitor the project through its lifespan in a governance role to ensure that objectives are met and that the principles are adhered to.

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3.3 Membership

Initial group membership is as follows, however membership may change as the project progresses according to the project requirements.

- a) Sandy Britain – Enterprise Architect, ICT SPA
- b) Ed Strafford – Senior Strategic Advisor, ICT SPA
- c) 9(2)(a) – Chief Data Steward, EDK
- d) Chris Harwood – Senior Manager, ELSA
- e) 9(2)(a) Project Manager, ELSA, Te Reo Maori
- f) 9(2)(a) - Senior Manager, ELSA, Te Reo Maori
- g) Stuart McNaughton – Chief Education Scientific Advisor, EDK

3.4 Roles and Responsibilities

The key roles of steering group members will be firstly to contribute to the definition and design of the candidate project to help ensure that it meets the stated objectives and adheres to the principles, and secondly to provide governance oversight of the project once it is in progress.

Individual steering group members will commit to:

- Attending all meetings
- Openly contributing their perspective in meetings
- Reviewing and commenting on any documentation produced by the project
- Contributing to decision-making by the group by voting when required to do so

3.5 Meetings

Meetings will be held bi-weekly during the project definition phase in order to maintain momentum, once the project has been defined and an agreement has been signed with Microsoft the frequency of meetings may be reduced to monthly.

Meetings will be no more than 90 minutes in duration and will take place both in person and over Zoom.

Ellen Macgregor-Reid and Stuart Wakefield will have a standing invite to meetings.

Microsoft representatives and other external (non-Ministry) stakeholders such as Education Sector representatives and DIA or other government agency representatives may be invited to meetings on an ad-hoc or regular basis as deemed appropriate.

Sandy Britain will chair the first meeting and decision will be made about a chair for subsequent meetings at the first meeting

A meeting quorum will be 5 members of the steering group.

Decisions are made by consensus (i.e. members are satisfied with the decision even though it may not be their first choice). If not possible, chair makes final decision.

Meeting agendas minutes will be provided by Sandy Britain / Ed Strafford, this includes:

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Both documents emphasise the need for a *Trust-based model* to underpin the use of data to advance social sector goals in general and in this case specifically within Education. The principle of Trust sits at the centre of the operational framework proposed here. Any deployment of AI, machine learning, or other data mining technologies in Education must first and foremost comply with the Trust principles outlined in the Data Protection and Use Policy (DPUP) and the Report of the Curriculum, Progress and Achievement Ministerial Advisory Group (CPA-MAG).

The DPUP further sets out guidelines for acceptable use of Data that form part of the operational framework for the Lighthouse project work

Alongside Trust sits the dual principles of Equity and Excellence for all NZ Akonga. These are cornerstone principles of the Ministry of Education, reflected in the Statement of Intent and other key strategic documents that help to further guide the selection of an appropriate project for the Lighthouse project.

The CPA-MAG report promotes the need for a commitment to being a “System that Learns”. This *Systems Thinking* concept articulates the importance of informational feedback loops to allow the system to improve performance based on experience. This is a powerful when considering the role of Data and AI technologies in creating a ‘system that learns’, therefore it

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² https://conversation-space.s3-ap-southeast-1.amazonaws.com/ELS+0324+CPA+Final+MAG+report_06+includes+Ed+Strategy+vision.pdf

is useful to position this concept within the framework and principles guiding the Lighthouse projects.

The final operational framework and principles will be agreed by the steering group and the documents published independently of this document.

5. Project Initiative

The Ministry's curriculum team is seeking to refresh *The New Zealand Curriculum* to ensure that teachers, students and their whānau (families) know and understand what learning matters and that progress is understood so that learning is not left to chance.

We have tools to support:

- assessment (e.g. e-asTTle)
- judgments about progress and achievement (eg The Progress and Achievement Consistency Tool – PaCT).

E-asTTle provides some information for students and teachers to support planning for next steps in learning. The frameworks underpinning this have not been reviewed for some time. The PaCT provides limited predictive ability about a student's likely progress. This functionality is rudimentary.

For this Lighthouse project we are seeking to develop and pursue a research question (or questions) that will explore the opportunities that AI could advance around understanding and supporting positive learning trajectories for students in mathematics/ numeracy using data from e-AsTTle and the PaCT.

MoE will work with Microsoft to implement technology-based solutions (AI-driven models and data science dashboards) that will optimise teaching and learning interventions and strategies for students

MoE would use the findings to understand how to improve our tools so they support more successful learning across the schooling pathway for more students. We are particularly interested in being able to do this for students currently underserved by our education system.

MoE will need to ensure the use of data in this project aligns with work currently underway to support the use of data in the education system in trusted ways.

Microsoft will have responsibility for the AI modelling workstream including delivery of usable software. MOE will be responsible for the research workstream.

From: 9(2)(a)
To: Adrienne.Moor
Cc: Paul.Jordan
Subject: RE: MOE and Microsoft Lighthouse Project
Date: Thursday, 27 August 2020 12:17:08 pm
Attachments: [image001.png](#)
[image004.jpg](#)
[Education lighthouse project - meeting follow up.msg](#)
[MOU Advancing Digital Societies - Appendix D4 Lighthouse Projects.pdf](#)

Hi Adrienne

I have attached an email from a meeting between the Ministry and Microsoft held on 23/7/20. Not sure from your email if you are aware of this so wanted to make sure we are all on the same page.

Also, I have a variation to a MOU that appears to be between DIA and Microsoft (attached). Ellen has asked if we could please have a copy of the MOU so that we are aware of what has been agreed and what (if anything) we might need to get agreed with Microsoft before we go too much further (e.g. a non-disclosure agreement). We currently have an RFP in the market that is closely related to where this might go and we need to make sure that Microsoft do not talk to any of their partner/providers about anything we share with them as part of the Lighthouse project without our ok.

Hoping this helps

Cheers

9(2)(a) | Procurement Manager
BE&S Corporate Procurement
Mobile 9(2)(a)
The Terrace, Wellington, 22

education.govt.nz

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From: Adrienne Moor [mailto:Adrienne.Moor@dia.govt.nz]
Sent: Thursday, 27 August 2020 10:13 AM
To: Paul Jordan <Paul.Jordan@dia.govt.nz>; 9(2)(a)
Cc: Ellen MacGregor-Reid <Ellen.MacGregor-Reid@education.govt.nz>
Subject: RE: MOE and Microsoft Lighthouse Project

Tēnā kōrua,

Thanks for the connect Paul, and 9(2)(a) nice to meet you.

We have had a couple of early discussions on the Lighthouse opportunity Iona initially expressed interest in, but progress has taken a back seat over recent months due to COVID and other priorities.

There are no T&C's in place as yet specifically for this Lighthouse initiative, but attached contains some background information on the direction for the kaupapa. Would be happy to pick up a discussion next week if that suits? Perhaps **Ellen** could we bring this together with the meeting we are arranging?

Ngā mihi mahana,
Adrienne

Kia haumarū, kia piki te ora – keep well, keep safe.

Adrienne Moor

Ngāti Awa, Ngāi Tūhoe, Te Atiawa

Kaiwhakahaere O Ngā Kaupapa Kapua | Lead, Government Cloud Programme

Te Kōtūi Whitiwhiti | Government Chief Digital Office

Īmēra: adrienne.moor@dia.govt.nz | waea pukoro: 9(2)(a)

cid:image002.jpg@01D5E5DF.05458ED0



From: Paul Jordan

Sent: Wednesday, 26 August 2020 4:31 PM

To: 9(2)(a) Adrienne Moor

<Adrienne.Moor@dia.govt.nz>

Subject: RE: MOE and Microsoft Lighthouse Project

Hi 9(2)(a)

Good to hear from you – I'm the Director Agency Engagement for the DPS branch here in DIA. Adrienne Moor is our person leading the Government Cloud programme and will have been the person involved in the Lighthouse initiative – I'll ask Adrienne to share the T & Cs or to point you in the right direction of someone who can.

Cheers

Paul

From: 9(2)(a)

Sent: Wednesday, 26 August 2020 3:05 PM

To: Paul Jordan <Paul.Jordan@dia.govt.nz>
Subject: MOE and Microsoft Lighthouse Project

Hi Paul

I have been given your name by Stuart Wakefield as being the DIA Relationship Manager for MoE.

I did leave a voice message for Jane Kennedy earlier today but I know she will be very busy and so was hoping that you could help. Not that you are not also very busy but I need some assistance.

The Ministry of Education has had a meeting with DIA and Microsoft regarding a Lighthouse project (I hope I have this right) that is to explore opportunities for innovative projects in NZ. I have been asked by Senior Management here to get hold of the T&C's that relate to the agreement between DIA and Microsoft for this initiative. It is very important that we understand the boundaries that have been agreed and that MoE are able to understand how this project is supposed to work, especially with other initiatives that we have going and planned

Are you able to send me a copy of this agreement?

Cheers

9(2)(a) Procurement Manager
BE&S Corporate Procurement
Mobile 9(2)(a)
The Terrace, Wellington, 22

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Project D (4) – LIGHTHOUSE PROJECTS

Project purpose. To explore opportunities for innovative projects in New Zealand.

Project approach. Both parties will invest time to identify candidate projects that exploit Microsoft capability and experience, and Government priorities, to meet New Zealand objectives using innovative approaches.

Once a candidate project has been identified it will need to have a sponsoring Government agency (Lead Agency) and Responsible Officer and a Sponsor from Microsoft.

Each project will then go through an evaluation phase to consider the opportunity and approach.

The Lead Agency and Microsoft will agree any terms they require to proceed including considering procurement processes, if needed. These terms will not be covered by this MOU but may be contracted under separate agreements if appropriate.

Projects will follow the governance approach, set out in Attachment E.

Initial Lighthouse Projects. The parties agree to work proactively together on, and GCDO agrees to encourage the relevant Lead Agency to scope and explore the viability of “lighthouse projects”, in accordance with the project approach outlined above. A lighthouse project will be one which:

- is important to the Government, the Lead Agency and to Microsoft;
- both parties have the capability and expertise, and the resources to allocate, to support; and
- is transformational and innovative in the way in which it can address important issues, and deliver benefits, for New Zealand and New Zealanders.

In assessing whether a project is suitable for further scoping, the parties will look to align the proposed project against:

- Treasury’s Living Standards Framework and, in particular, identify the project as against the four capitals that generate future wellbeing:
 - natural capital;
 - human capital;
 - financial and physical capital; and
 - social capital; and
- subject to relevant approvals and Microsoft’s application processes, Microsoft’s AI for Good programme, or other Microsoft investment programmes, identifying the project against one of the then-current AI for Good categories, if appropriate.

The parties will also look to measure the project success and outcomes against the Treasury’s Living Standards Framework Dashboard.

The parties will prioritise possible initial lighthouse projects and agree the timeframe and processes for scoping and delivering the initial projects. As at the date of this MOU the

parties intend that they, and/or the relevant stakeholders that are or may be involved in the lighthouse projects, will scope the following as the initial lighthouse projects, and will work to refine the scope and allocation of cost and resources in respect of these projects, over the 3 month period from the date of this MOU:

1. **Future of work/digital skills for future workforce.** GCDO, working closely with the Ministry of Business, Innovation and Employment, will facilitate a range of agencies to work with Microsoft, and appropriate third party stakeholders, to investigate creating a program which supports government aspirations to improve the readiness of New Zealand small and medium sized businesses to successfully cope with digital disruption and transformation and enable New Zealanders to acquire the skills they will require to successfully participate in the workforce in the future.
2. **Supporting learning in the new digital context.** Teachers being able to effectively personalise learning for the children and young people they work with is important both for education outcomes and teacher well-being. AI can play an important role in this space. AI applications in support of educational outcomes can include exploration of AI for helping to break down the barriers many children face due to learning support needs. GCDO, working closely with the Ministry of Education as the sector lead, will facilitate a range of agencies to work with Microsoft, and appropriate third party stakeholders, to investigate creating a program to apply AI and other digital capabilities to support New Zealand's Educational outcomes in a digital context including, for example, those who are currently challenged with accessibility and learning issues.

Other possible projects will be proposed and qualified using the process above. Projects should be able to be identified against the Living Standards Framework.

From: [Sandy Britain](#)
To: [Robyn Caygill](#)
Subject: FW: Updated terms of reference doc and further thoughts
Date: Wednesday, 3 November 2021 9:18:00 am
Attachments: [Terms of Reference - LighthouseV0.3.docx](#)

Related to today's discussion – here is where the work that Stuart Wakefield asked me to lead on AI and the Microsoft Lighthouse project opportunity got to. I created a TOR for the Steering Group.... And then it fell into a black hole because many hands wanted to be on steering wheel, but nobody had the time to actually do any work or even get to a meeting to make the next step... so nothing further happened.

Stuart McNaughton went on to do some other work with 9(2)(a) and co with AWS, he also said he was talking to Iona directly about opportunities, so I expect you have caught up with him.

As far as I know nothing further has happened with this Microsoft opportunity, Google also approached me about a similar opportunity for research-based work with us, but there was no owner for it, so again nothing happened.

Anyway talk later

From: Sandy Britain

Sent: Monday, 1 February 2021 1:32 PM

To: Stuart McNaughton <Stuart.McNaughton@education.govt.nz>; 9(2)(a)
 9(2)(a) Chris Harwood <Chris.Harwood@education.govt.nz>;
 Ed Strafford <Ed.Strafford@education.govt.nz>

Subject: Updated terms of reference doc and further thoughts

Hi all,

Now that everyone is back at work, please find attached an updated Terms of Reference V0.3 draft for the lighthouse project

In this version I have made the following changes:

1. Added Ellen MacGregor-Reid as the business owner (Stuart Wakefield advised that was his understanding but it would be worth checking with her office whether she wishes to continue as business owner, he said he would be happy to take on that role if not, so have kept him in as a co-business owner)
2. Added the confirmed members from ELSA as advised by Chris
3. Have clarified in the Project Initiative section that the intent is that there will be both a research workstream (led by MOE) and a technology workstream (led by Microsoft).
4. I have added a sentence which suggests the chair of the steering group will be decided at the first full meeting, rather than presuming a chair in advance.

Initial review by Stuart Wakefield, 9(2)(a) and Chris suggested that the procedural stuff is mainly fine. The initiative description needs to be elaborated (though this is maybe not the right place for that)

I am sending this version out in particular for Stuart McNaughton and Ed as you didn't see the earlier version. Very keen for any comments on the proposed initiative. I think it would be helpful to try to create some high-level milestones and deliverables for both the technology and research workstreams.

Once I have your feedback, I will send out to the rest of the group with a date for the first meeting. Also interested to know at what point to re-engage with Microsoft, I expect they are keen for an update on our progress.

I have been doing quite a lot of reading over the break. This article about adaptive and personalised learning using AI personal tutoring systems (SquirrelAI and ALEKS) gives a

fascinating insight into the scale of this in China: [China has started a grand experiment in AI education. It could reshape how the world learns. | MIT Technology Review](#). I started reading some of the background to Knowledge Space theory on which these systems are based which was fascinating.

Some other useful info here:

Trustworthy AI in Aotearoa – AI Principles developed by the AI forum [Trustworthy-AI-in-Aotearoa-March-2020.pdf \(aiforum.org.nz\)](#)

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