Big Data Cross Sector Project
Case for Change

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1. Administrative Information

Name of Cross-Sector Project	Big Data Cross-Sector Project
Name of the Lead SSO	PwC's Skills for Australia
Project Webpage Address	https://www.skillsforaustralia.com/cross-sector-projects/big-data/
Members of Project Reference Group	Attachment A
Training Package(s), Qualifications, skill sets and Units of Competency impacted by proposed cross-sector training product components	Attachment B
Stakeholder Consultation method and add scale	Attachment C

2. Executive Summary

The Australian Industry and Skills Committee (AISC) has taken the opportunity to strategically address current and future skills needs across multiple industries through eight cross sector projects. These eight common skills areas have been identified by various Industry Reference Committees (IRCs) in their Industry Skills Forecasts and Proposed Schedules of Work, which set out the emerging industry trends, skills needs and training priorities over a four year period, for a particular industry. The aim of these cross sector projects is to develop training package components that address these eight common skills areas across multiple industries in a coordinated and efficient way.

Big Data cross sector project: purpose, scope and objectives
The Big Data cross sector project, led by PwC's Skills for Australia, seeks to understand industry support for developing common Big Data related units of competency that can be contextualised across various industries. This project will review current and emerging developments in Big Data skills, particularly in relation to data management, data analytics and data driven decision-making, and identify related skills needs shared by multiple industry sectors. This project also aims to better understand what these units might look like, how they might be delivered, and what benefits or risks need to be considered with any potential changes to existing vocational training. The Big Data Project Reference Group (PRG), consisting of IRC members and subject matter experts, is responsible for the direction of this cross sector project and provide governance and make decisions based on the industry and stakeholder groups they represent.

Relevant sectors/industries impacted
Due to the broad reaching nature of Big Data in an increasingly digital world, there is a long list of industries which could potentially benefit from improved Big Data related training products. Some of the industries that will experience the most significant impacts will be information and communications technology, financial services, business services, mining (of all types), automotive and health.

Summary of proposed changes
The four main changes proposed are as follows:
1. Develop a new basic unit that could apply across a broad range of training packages, with the aim of improving general data literacy of vocational learners.
2. Develop 5 new units at a nominal Diploma level to form a skill set in 'Applied Data Analysis'. These units could also be drawn upon as electives across a broad range of training packages to bolster existing qualifications and reduce duplication.
3. Develop 3 new common units to remove duplicated content. These new units (in addition to the 5 new units at the Diploma level mentioned above), could potentially replace 18 existing Units of Competency related to Big Data.
4. Identify Units of Competency that already exist and could be imported into other training packages as electives to improve portability. Our analysis has identified 26 potential units currently housed within the BSB Business Services, DEF Defence, ICT Information and

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Communications Technology, MSF Furnishings and MSL Laboratory Operations training packages. The aim of this identification exercise is to improve the flexibility of existing units for potential broader use across the training system.

3. The Case for Change

What is Big Data?

Big Data is often described as high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation.[1] It is important to note that there is not a standard definition of 'Big Data', but this explanation from the Gartner IT Glossary is broadly accepted by industry and was often found throughout our desktop research.

Sector/industry drivers of change

This Case for Change is proposed in response to the following industry drivers identified in desktop research, stakeholder consultations and a number of Industry Skills Forecasts prepared by various IRCs:

1. **Rapidly changing technologies as part of the 'Industry 4.0' movement is increasing the relevance of Big Data related skills -** more specifically, this trend is driven by the acceleration of storage space (especially via 'the cloud'); the improvement of sensing technologies;[2] increasing power of computers and data analysis tools; the rise of artificial intelligence (including machine learning); automation; the 'Internet of Things'; continuing digitisation of plants and manufacturing; and increasing frequency of online transactions.

2. **The amount of data being generated is growing exponentially** - the world creates an additional 2.5 quintillion bytes of data every year and, in 2016, approximately 90 percent of all existing data was created between 2014 and 2016.[3]

3. **Demand for employees with data analysis skills continue to rise**[4] - this sentiment was echoed by employers from a variety of sectors that we consulted with; employers are seeking learners to be equipped with Big Data related skills.

4. **The ability to understand and make decisions based on data is important at all levels** - entry-level employees are being asked to use data in their decision making, and management are asked to make strategic business decisions based on data driven insights.[5]

5. **Emerging skills and training gap** - research and consultation feedback suggests that workforce entrants across many industries do not have the required Big Data related skills for their role.[6] Furthermore, this is aggravated by the fact that current training is not adequate to equip workers with these skills.

6. **Organisations that leverage data are seeing improved outcomes** - data analytics is used to create value and improve performance across a variety of business functions. Examples of possible benefits include more efficient and cost effective processes, better utilisation of resources, and better business intelligence to drive decisions.

7. **A deficiency in Big Data related skills will undermine Australia's global competitiveness**[7] - to keep up with an increasingly connected digital world, Australia will need

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[1] Gartner, *IT Glossary* (Accessed 23 October 2017) < https://www.gartner.com/it-glossary/big-data>.

[2] Australian Industry Standards, *Rail IRC Industry Skills Forecast and Proposed Schedule of Work* (2017) <http://www.australianindustrystandards.org.au/>.

[3] Rick Osowski, *How big is big data?* (IBM Bluemix Blog, 2015) <https://www.ibm.com/blogs/>; PwC's Skills for Australia, *Business Services Industry Skills Forecast and Proposed Schedule of Work* (2017) <https://www.skillsforaustralia.com/>.

[4] Brad Howarth, *Rising demand for big data analytics skills triggers wage debate* (CMO, 2013).

[5] CSIRO, *Tomorrow's digitally enabled workforce* (Data 61, 2016) <https://data61.csiro.au/>.

[6] Katherine Noyes, *How the skills shortage is transforming big data* (PC World, 2016) <https://www.pcworld.com/>.

[7] The Australian Information Industry association, *Inquiry into government procurement procedures* (AIIA Submission, December 2013).

to foster relevant Big Data related skills or risk falling behind its global competitors such as the United States, China and India.

These trends and industry drivers have all led to a greater demand for people with skills to capture, interpret and take advantage of data.

Current and emerging developments in skills needs

Top-down analysis based on industry trends and skills needs

A view of current and emerging developments in skills needs was achieved through extensive stakeholder consultations. Two clear themes emerged from our consultations: a need for basic Big Data and data analytics awareness; and a need for more advanced Big Data related skills.

Overwhelmingly, stakeholders across all industries we consulted were of the view that all workers should have a basic understanding of what Big Data is and a general understanding of how data analytics can be applied to benefit an organisation. Current perceptions are that there is no basic unit of this nature which introduces Big Data as a topic in any of the training packages.

There was also broad support from stakeholders for the development of more advanced Big Data related skills. These included topics such as data analysis, data visualisation and presentation, data interpretation, data collection, data management (including data administration, warehousing and cleaning), data quality and governance (including data privacy and security) and data modelling (including regression analysis). Some of these skills are covered by existing training products; however, a large skills gaps still remains in the majority of training packages.

From a training product delivery viewpoint, there was strong support for a 'multi-tiered' approach to the teaching of Big Data related skills (i.e. basic vs more advanced skills). Similarly, stakeholders were also supportive of a proposition to develop a skill set relating to Big Data skills.

A large proportion of our stakeholders thought that a Big Data qualification was not an appropriate solution to address current and emerging Big Data skills needs. More specifically, many major employers we consulted expressed hesitations about creating a vocational qualification in 'Big Data'. They argued that advanced data science can be highly complex and theoretical, and is therefore not appropriate to a more practical applied pathway. Furthermore, they pointed out that enrolled learners of a qualification like this might reasonably expect to find a job in Big Data upon completion, however, these roles in industry are typically filled by people with at least a Bachelors degree. Unlike the qualification, the expectation of the proposed skill set would be to supplement an already existing occupation or qualification and generally increase an individual's data analysis skills so they can more effectively complete their primary role.

Although a qualification is not recommended at this stage of the Big Data Cross Sector Project, it should not be ruled out indefinitely. An appetite for Big Data related vocational qualifications may emerge once subsequent reviews of Big Data related materials are completed in years to come.

Bottom-up analysis of existing training package components

We conducted a broad initial search for unit titles on training.gov.au using the keywords "data*" (capturing the term "dataset" and "database"), "information", "SCADA", and "analytics", and identified 454 units of competency.[8] These units were further filtered for material related to Big Data skills, yielding a total of 44 Units of Competency.[9]

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[8] Australian Government Department of Education and Training, See '*Nationally recognised training search portal*', (2017) <https://training.gov.au/Home/Tga>.
[9] At the time of writing of this Case for Change, the Department of Education and Training was working to develop and launch an algorithm to assist with content analysis of training package components. Depending on when this is made available, more sophisticated unit analysis may be possible and therefore may alter the number of potential units identified in this Case for Change.

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The remaining 410 units were not included in the scope of this cross sector project. These units were deemed to be industry-specific and non-transferrable to other training packages. Some examples of the topics covered include the National Livestock Identification System, surveying and spatial data, highly technical defence units, data cabling, confidential police materials and some ICT materials specific only to specialists in that area.

Units that could be removed because of duplication
Of the 44 Units of Competency that were deemed to be in scope, we identified 18 that could potentially be collapsed into the common proposed Units of Competency. This was determined by assessing the unit elements and skills outcomes for similar terminology. Given this proposed change would have a direct impact on a number of training packages, a careful review of these existing Units of Competency would need to be completed before these units could be collapsed, accompanied by further targeted consultation. To see a more detailed breakdown of the mapping of potential superseded units to proposed new Units of Competency, see Attachment B.

Units that could be imported into various training packages
We also found 26 Big Data related Units of Competency that already exist and could be imported into other training packages. For example, units relating to building databases and data warehouses that currently sit in the ICT training package have originally been drafted in an industry agnostic manner, and could be adopted by other training packages as electives. We do not envisage that these units will require any alterations, but they should be reviewed for currency before importing into other training packages. More detail regarding these units can be found in Attachment B.

Additional training package component considerations
We identified 4 Units of Competency from the Foundation Skills Training Package that relate to simple data collection and simple data organisational skills. It is not proposed in this Case for Change that these units are altered, but for the sake of completeness, it is important to highlight that these materials exist and could potentially act as pathways or pre-requisites to more advanced Big Data related vocational training.

Opportunities to promote occupation mobility and for modernising sector/industry specific units, qualifications or skill sets

It is clear from our top down and bottom up analysis that there is an opportunity to develop common Big Data units that equip learners with general, Big Data related skills that could be transferable to any industry, occupation or level in an organisation. These industry agnostic, common units then serve two purposes: common units that can easily be adopted by multiple training packages and contextualised for industry; and common units that can help identify existing units for review or removal to address obsolescence and duplication in training packages.

Proposed changes

#	Change	Rationale
1	**Develop one new basic unit to introduce learners to Big Data and data-driven decision making at a conceptual level across a broad range of training packages.** Further consultation may be required, but this unit could be called 'Introduce Big Data and Data Driven Decision Making'.	The aim of this proposed unit would be to improve awareness of Big Data at a conceptual level and improve data literacy generally across many training packages. This unit could introduce learners to the different types of data and analytics techniques (i.e. descriptive, diagnostic, predictive and prescriptive analytics) and how to read and interpret outputs and visualisations produced by Big Data sets.

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2	**Develop 5 new units at a nominal Diploma level to form a skill set in 'Applied Data Analysis'.** Further consultation may be required, but these units could include:	This skill set could be taken by learners or workers from multiple sectors who want to boost their skills in data analysis. It might also encourage some learners to continue their data related studies with further education.
	1. Visualise and present data 2. Use data for advanced operational decision making 3. Analyse data and report results 4. Manage data quality and governance 5. Manage and maintain datasets	In addition, these units could be drawn upon as electives across a broad range of training packages and in some instances could be used to reduce duplication.
3	**Develop 3 new common units to replace existing units that are related to Big Data skills in order to reduce duplication.** Further consultations may be required, but these units could include:	The purpose of this review and development of common units would be to reduce duplication and complexity in the training system.
	1. Collect and record data 2. Analyse basic test data 3. Analyse and interpret data	These new units (in addition to the 5 new units at the nominal Diploma level), could potentially replace 18 existing units related to Big Data.
4	**Identify Big Data related Units of Competency that already exist and could be imported into other training packages as electives to improve portability.**	Our analysis has identified 26 potential units currently housed within the BSB Business Services, DEF Defence, ICT Information and Communications Technology, MSF Furnishings and MSL Laboratory Operations training packages. The aim of this identification exercise is to improve the flexibility of existing units for potential broader use across the training system. See Attachment B for further information.

Total proposed changes

Total proposed changes to training products	Number of training products	Proposed change #
New units to be created	9	1, 2, 3
New skill set(s) to be created	1	2
Existing units to be reviewed for duplication and possible removal	18	3
Existing units to potentially import into other training packages	26	4

Implementation advice and considerations

Listed below are some implementation considerations to support these proposed changes. For more detail, please refer to Attachment B.

- *Consider where the potential new Big Data cross sector units should be housed*
  The cross-sector nature of this project means it is not immediately obvious where the potential new Big Data related units and skill set should be housed. A number of options could be considered, including:
    - Create a generic 'bank' of units or generic training package to house the units.
    - Use an existing training package, such as ICT Information and Communications Technology or BSB Business Services.
- *Continue to engage IRCs and work with SSOs to encourage uptake of proposed new Big Data units into other training packages as electives and replacements for*

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duplicated units

Extensive consultations have taken place to justify the proposed changes in this report (see Attachment C). However, in order to ensure that the proposed new units will be taken into various training packages as potential electives or replacements for duplicated units, we will need to continue to engage IRCs and work with SSOs throughout the training product development process. For a detailed overview of how superseded units map to proposed new generic Units of Competency, see Attachment B.

- ***Continue to engage IRCs and work with SSOs to help identify additional existing units that are duplicated and could be removed***

  We would also seek further feedback from IRCs and SSOs regarding any potential units they believe might be duplicated and could be replaced by proposed new Big Data related units. Upon subsequent reviews of training packages generally, IRCs should also consider whether there is an opportunity to address Big Data related topics. This might include the importation of Big Data related common units, or updating existing material to align with Big Data concepts. This approach would ensure that this cross-sector project is not treated in isolation and that existing training packages complement the outcomes to be achieved.

- ***Consider implications for upskilling trainers who will teach and contextualise common units***

  The development of common units will necessitate greater emphasis on contextualisation, and this may have have implications for the upskilling of trainers who will teach these units and/or the companion volumes that accompany the proposed new units.

- ***Consider funding arrangements and differences between state/territory jurisdictions***

  Traditionally, skill sets do not attract government funding, and some stakeholders suggested that this might impact uptake of the proposed skill set. Nonetheless, a large part of the utility of these units is their application to other training packages in the form of electives.

4. Industry Support for Change

Consultation approach

A key objective of our stakeholder consultations was to achieve breadth of representation from industries, geographic locations, and stakeholder categories. To do this, we leveraged our existing PRG and IRC member networks, the broader PwC network, other SSO and Department contacts, training providers, subject matter experts and thought leaders. We also consulted with additional contacts who were referred to us through the course of this cross sector project, pushing content through these networks and social media channels (e.g. LinkedIn, Twitter, industry newsletters, Skills for Australia website subscribers).

Industry views were captured via stakeholder interviews, focus groups and responses to an online public survey. The method and scale of stakeholder consultation undertaken in building the Case for Change is outlined in Attachment C – Stakeholder consultation method and scale. In summary, there were 113 responses through our consultation channels, representing 27 different industries. Furthermore, all states and territories contributed at least in one form to the consultation process. This provides strong evidence of effective consultation, engagement and collaboration across a diverse spread of sectors and industries. Assuming this Big Data Cross Sector Project progresses to a second phase of work (i.e. a Case for Endorsement), then additional targeted industry consultations will be conducted to further support the development of the proposed training products.

Cross-sectoral support for proposed changes

We consistently heard across all forms of consultation that current vocational training is not adequate in equipping workers with Big Data related skills. This sentiment was echoed by stakeholders across all industries consulted and state/territory jurisdictions. More specifically, 74% of respondents to the Big Data industry survey indicated that they had some degree of difficulty finding workers with the relevant Big Data skills that were needed in their industry. For example, in the mining industry, people with Big

Data related skills are needed to predict equipment failures.[10] Similarly, in healthcare, people with predictive analytics skills are needed to more efficiently allocate hospital resources.[11]

A number of issues were raised by stakeholders and these were mainly supporting considerations that need to be taken into account for successful implementation and delivery of these common training package components.

Issues identified by stakeholders

Potential risk of obsolescence if new training products are created in Big Data related skills. Some stakeholders noted that there was a risk that the proposed new training products could quickly become outdated due to the rapid pace of technological change and relatively slower process of training product development and review cycles. We see two methods to mitigate this risk. First, draft units in a more generic nature that allows training providers to refer to the most current examples and applications of Big Data related skills. Second, conduct more frequent reviews of Big Data related training products to ensure that training materials keep up with advancements in Big Data related disciplines. Stakeholders were still in agreement that, despite this risk, the benefits of updating vocational training to include Big Data related skills far outweighs the negative prospect that they may become obsolete for a short period of time before they are updated again.

Some concerns about required knowledge (prerequisites) in mathematics and digital skills. It was highlighted by some stakeholders that learners of Big Data related skills may require some background knowledge of general numeracy, mathematics, statistics, problem solving and digital skills. Further consultation throughout the training product development process may be required to ascertain more accurately the level of prerequisite knowledge required so that it can be incorporated into the development of units.

Strong industry demand for more hands-on/practical experience. A key piece of feedback regarding training delivery was that practical 'hands-on' teaching methods were generally popular with learners. If the proposed new common Big Data units are approved, it will be important to ensure that there is a balance between practical and theoretical training elements.

Sensitivities and/or dissenting views

One dissenting view that was identified by a small number of stakeholders was that the general nature of industry agnostic units can make it difficult for learners to understand their relevancy and remain engaged. In order to maintain learner interest, we would propose that each unit incorporates a practical component and is flexible enough for training providers to contextualise the unit to each industry.

Another sensitivity to highlight is the feedback we received regarding a vocational qualification in Big Data. As discussed above in more detail, it was found that a large proportion of stakeholders did not think a qualification was appropriate as there is not likely to be industry demand for learners with Big Data related vocational qualifications at this point in time. It is important to note that the appetite for a Big Data related vocational qualification may emerge in subsequent years, so it should not be ruled out indefinitely.

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[10] Dean Takahashi, *IBM uses big data to prevent mining equipment failures* (Venture Beat, 2014) <https://venturebeat.com/>.

[11] George Leopold, *Hospitals Use Predictive Analytics to Allocate Resources* (Datanami, 2014) <https://www.datanami.com/>.

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5. Impact of Change

Throughout our consultation process, we asked our stakeholders to comment on the potential impacts of change (including risks and benefits).

Stakeholder	Impact
Industry wide	● Improve our ability to find patterns faster to help prevent or mitigate the consequences of impending disasters ● Better training in Big Data will encourage international students to study in Australia, growing the Nation's exports of education products ● Big Data will help to decarbonise electricity supply by more accurately predicting household use of battery storage against what is required from the grid ● In primary industries, Big Data will help to better serve the increasingly demanding tastes of customers, driving export sales and gaining access to new markets
Employers	● Improve efficiency by embedding data into more organisational decisions ● More effective use of resources and assets ● Increase reliability of major plant operations and vehicles as failures are predicted earlier ● Address part of the current Big Data skills shortage ● Improve alignment of training products to the needs of industry
Learners/ Employees	● Increase awareness of Big Data concepts and applications ● Equip learners to apply Big Data related skills across various roles if they change jobs or occupations ● Increase individual effectiveness in the workplace
Registered Training Organisations	● Big Data skills which are in demand will increase enrolments and completion rates
Government	● Improve efficiency of the training system through the removal of duplicate/obsolete units of competency ● Increase flexibility in training product offerings

Implications of not implementing the proposed changes

Stakeholder	Impact
Industry wide	● Digital literacy of the rest of the world will improve while Australia is left behind - the nation will lose its competitiveness in the global marketplace
Employers	● Domestic data analysis work will continue to be outsourced to other countries. If this trend is allowed to continue, foreign countries could end up knowing more about us as a nation than we currently know about ourselves
Learners/ Employees	● If industry agnostic Big Data related skills are not developed, private vendors are likely to fill the education void, and people may acquire skills in company specific silos that are difficult to transfer (e.g. in a Microsoft or Cisco ecosystem) ● Consequently, this will mean less mobility and fewer job opportunities
Registered Training Organisations	● Learners will gravitate towards other education providers (such as private online courses), decreasing the relevance of RTOs as an educational body
Government	● The training system will continue to experience inefficiencies as duplicated units remain in the system

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Advice on linkages with other cross sector projects

As the cross-sector projects address skills needs across all industries, it is important that any crossover between projects is identified. The below table lists the projects that have been identified as having possible links to the Big Data cross sector project, and how that link is being addressed.

Cross-Sector Project	Lead SSO	Link
Cyber Security	PwC's Skills for Australia	There is a degree of overlap between the Cyber Security and Big Data Cross Sector Projects. Examples of this intersection include the security of data; use of Big Data analytics to detect fraud; and log analysis using a Security Information and Event Management (SIEM) platform. The ICT Training Package currently addresses topics such as data security and data privacy,[12] but going forward there may be opportunities for the two cross sector projects to collaborate further upon subsequent reviews of training products.
Teamwork and Communication	PwC's Skills for Australia	One of the themes we heard from our consultations was that it is important for people to be able to communicate the insights they find from their data analysis in a clear and coherent manner. This observation might not directly change the development of Big Data units, but it does highlight the importance of the inclusion of communication skills for all learners.
Automation	Skills Impact	Automation is often underpinned by the rapid collection and processing of Big Data (e.g. driverless cars with many sensors capturing live data). In order to effectively develop training products in Automation, there is an opportunity to share relevant Big Data research and insights with the Automation cross sector project.
Digital Skills (previously Coding)	Innovation and Business Skills Australia (IBSA)	Coding related units could bolster Big Data related skills as various programming languages are heavily used in Big Data related disciplines (e.g. R, Python, SPSS and SQL). Similarly to the Automation cross sector project, there is an opportunity to share relevant Big Data research and insights with the Coding cross sector project.

How the proposed changes advance the project's priorities

The AISC has established the cross sector projects to address skills shortages that are common across a variety of industries. This Case for Change has proposed the creation of a Big Data related skill set and several Units of Competency to ensure that vocational learners across a variety of industries can access up-to-date Big Data related training. To ensure that the new training products are current and relevant, continued cross-sectoral input would be sought to address specific skills shortages. In addition, another one of the aims of the AISC was to minimise unit duplication in the VET sector. To address this, we have proposed a review of 18 Big Data related units that could possibly be replaced by proposed new common units.

Estimated timeframes for implementing the proposed changes

Assuming the Case for Change is approved by the AISC at the February 2018 meeting, it is anticipated that implementation of the proposed changes could take place by November 2018, at which point a final

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[12] For example, the 'ICTNWK403 - Manage network and data integrity' Unit of Competency sufficiently addresses topics such as data security and data privacy. See also Attachment B.

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Case for Endorsement would be ready for submission to the Department of Education and Training. This would allow time for a further round of targeted consultations to support the drafting of new training products, review existing units and design and implement updates to these, and draft a supporting Case for Endorsement. We anticipate that this process would take approximately 9 months to complete from the date of approval of this Case for Change.

Implementing the COAG Industry and Skills Council (CISC) Reforms for Training Packages

The table below identifies how the Case for Change will address the focus areas agreed upon by the CISC skills session in November 2015.[13]

CISC Reform	Evidence of how the recommended work will help implement the CISC Reforms
Ensure obsolete and superfluous qualifications are removed from the system	As a result of this Case for Change, it is likely that multiple units of competency will be removed from the training system.
Ensure that more information about industry's expectations of training delivery is available to training providers to improve their delivery and to consumers to enable more informed course choices	Companion Volumes will be released with the proposed new training products, containing information about industry's expectations of training delivery.
Ensure that the training system better supports individuals to move easily from one related occupation to another	The development of industry agnostic Big Data related units of competency will allow learners to apply these skills in various roles and across various industries. Furthermore, it may act as a pathway into tertiary education in related fields such as Computer Science or Computer Engineering.
Improve the efficiency of the training system by creating units that can be owned and used by multiple industry sectors	Similarly, industry agnostic units of competency could be easily drawn into a wide range of training packages to benefit many industry sectors. See Attachment B.
Foster greater recognition of skill sets	A key proposed change is to develop a skill set in Applied Data Analysis. This will serve to increase the use and recognition of skill sets in VET more broadly.
Ensures that new training courses can be developed as quickly as industry needs them and available to support niche skill needs	Learners who are enrolled in accredited courses that import the proposed Big Data related units of competency will benefit from training which has been updated to meet industry needs.

This Case for Change was agreed to by the Big Data Project Reference Group.

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Big Data PRG Chair   Signature of Chair   Date

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[13] *Communiqué for the COAG Industry and Skills Council Meetings Skills Ministers*, (Communiqué, 2015) <https://docs.education.gov.au/>.

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