

BCG



TAFE NSW

The NSW Vocational Education and Training market and TAFE NSW's competitive position within it

2015

THE BOSTON CONSULTING GROUP

Background and methodology

Background

The Boston Consulting Group (BCG) was engaged by TAFE NSW in January 2015 to analyse the vocational education and training (VET) market in NSW given changes underway, to lay out TAFE NSW's and its Institutes' competitive position within this market compared with private and other non-government providers, and to identify the implications of changes on TAFE NSW's future competitiveness.

In this document, we provide a summary of the analysis from this work, including:

- An overview of the VET market in NSW
- A comparison of TAFE NSW's offering to students and employers with competitors' offerings
- A comparison of TAFE NSW's cost position compared to competitors and TAFEs in other states
- A summary of the potential implications on TAFE NSW's current and potential future market position.

This document is intended to assist TAFE NSW in responding to changes in the sector by providing an independent analysis of its position in the NSW VET market today and estimates of how that may affect its future.

It is not intended to represent the views of the NSW Government or TAFE NSW, its management or staff.

Approach and methodology

To understand TAFE NSW's competitive position and performance versus others in the NSW VET market, we carried out various analyses including:

- Surveying the relevant industry trends (e.g., online)
- Segmenting the market and types of VET offerings (e.g., by course level, field of education, and student type)
- Estimating the financial performance of reputable competitors and interstate TAFEs, including their cost base and profitability.

It should be noted that this type of external analysis of competitors' market and financial position is challenging given that much of the information is private. To overcome this, we relied on a number of published sources, (e.g., annual reports, enterprise agreements, pricing information, and analysts reports), which we triangulated to estimate the financial position of reputable competitors in the VET sector. To protect the confidentiality of private VET providers and TAFE NSW, we have at times removed names and specific metrics where necessary.

We worked closely with TAFE NSW to test our findings, as well as to access and interpret the TAFE NSW data used in this report. Throughout this work, we endeavoured to use the most recent data available. In most instances, the financial data used is from financial year (FY) 2013/14 (e.g., cost and total revenue data) and enrolment data from calendar year (CY) 2013. However, in some instances, we were required to use financial and other data from FY2012/13 (e.g., revenue by segment or Institute), given systems issues resulted in some discrepancies in the FY2013/14 data.

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Executive summary

TAFE NSW is operating in an increasingly competitive vocational education and training (VET) market in NSW.

The Australian VET market is large and highly competitive. It is made up of nearly 2000 often small and highly specialised Registered Training Organisations (RTOs) with various financial management and models and commercial incentives (e.g., for profit, not-for-profit, cost centres). TAFE NSW is Australia's largest VET provider and continues to dominate the NSW market. However, TAFE NSW will face increased competition, especially in its largest areas of current provision, including government-funded and fee-for-service sector; value-seeking and price sensitive customers; lower-level certificates and main fields of education.

On-going changes within the VET market are negatively impacting TAFE NSW's competitive position. TAFE NSW has a strong reputation, with students rating the quality of its teaching above that of private RTOs. However, TAFE NSW lags the market – by up to 8ppt – on other key dimensions that students and employers value, such as job placement and convenience. While Open Training and Education Network (OTEN), TAFE's online platform, is very successful, TAFE NSW also lags competitors in the delivery of blended or digitally-enhanced training, which the majority of students now expect. In growing VET markets, such as international students and higher education, TAFE NSW also under-performs, with a lower share of these markets than TAFEs in other states.

TAFE NSW's cost structure is uncompetitive, further undermining its market position. TAFE NSW is at a significant unit cost disadvantage versus reputable competitors, which makes it challenging to price competitively against more efficient providers. TAFE NSW's unit costs are double those of the most efficient reputable private providers and 60% above other TAFEs. Workforce and asset costs drive this cost differential. High teaching salaries and low teaching hours means delivery costs are high. High physical assets in multiple campuses across overlapping geographies and low utilisation of those assets drive up non-delivery costs. The structure of TAFE NSW as 10 Institutes and multiple online offerings also adds overhead by creating multiple small institutions and duplicating administrative functions.

Without change, TAFE NSW will be increasingly uncompetitive and may suffer financial losses.

To remain competitive, TAFE NSW must improve its productivity, decrease its cost base, and maintain or grow enrolments up in order to defray high fixed costs. Without change, TAFE NSW could see market share decreases similar to those experienced by other state TAFEs following increased contestability. TAFE NSW will need to reform from its current traditional model to an efficient, modern, customer and commercially-focused business.

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TAFE NSW is operating in an increasingly competitive NSW vocational education and training market

The vocational education and training (VET) market in Australia is large and is forecast to grow by 2% per annum to reach \$10 billion by 2019-20 (pg 7). Growth is expected for both education providers and student enrolments as the domestic demand for up-skilling continues and international student numbers rebound.

Nationally, the market is fragmented with up to 2,000 private and government-funded providers competing for enrolments. These providers comprise TAFE institutes, private registered training organisations (RTOs), other RTOs and universities (pg 8).

These players have differing abilities to compete on reputation, price, and educational offering. Some of this competitive differentiation is driven by the diverse financial management models and commercial incentives of the players (e.g., profit/non-profit, asset ownership and costs, financial structure, cost of debt, and funding sources).

NSW is Australia's second largest VET market and has the highest level of government-funding provision (pg 10). As of 2013, ~580,000 students were enrolled at VET institutions across NSW and supported by a total of \$1.7b recurrent government expenditure (pg 9).

TAFE NSW is the largest VET provider in Australia. In NSW, government-purchased education funds the majority of VET training in the state. Prior to the 2014 Smart & Skilled tender,

TAFE NSW dominated the NSW VET market with 76% share of enrolments with the remaining captured by private RTOs, schools, etc. (pg 11).

Areas where TAFE NSW's business is concentrated are becoming increasingly competitive. The market can be viewed from three perspectives:

- Who purchases VET? ~80% of TAFE NSW enrolments are "traditionally purchased" – i.e. government purchased or domestic fee for service students. These segments will become increasingly competitive as a result of contestability, with TAFE NSW likely to lose share in this market in the next round of competitive tendering (pg 13).
- Who are VET customers? ~65-85% of TAFE NSW customers can be characterised as value-seeking or price-sensitive customers. Each of the customer segments has a unique competitive dynamic and sub-set of providers. VET providers are often define their value proposition to these specific segments, tailoring their offering rather than having a one-size-fits-all approach (pg 14).
- What is studied? The market is dominated by lower-level certifications (Certificate III and below) where more standardised offerings makes competition broader (pg 16). ~80% of TAFE NSW's enrolments are in four fields of education: management, engineering, mixed fields, and society and culture. Some of the fields (e.g., management) are especially competitive, while others are lower margin when done well (e.g., mixed fields)(pg 17).

The Australian vocational education and training sector is large and forecast to grow by 2% p.a. until 2019-20

Industry revenue for the VET sector is forecast to grow by 2% annualised to ~\$10 billion by 2019-20...



...which reflects key changes in the market

The VET market is undergoing funding and structural change

- More industry grants funded as part of National Partnership Agreement on Skills Reform
- Shift towards competitive funding for providers based on student choice and contestability (e.g., NSW's Smart and Skilled reforms, Commonwealth VET FEE Help)
- New private providers are entering the market in fee for service categories

Domestic student enrolments are growing given macro trends

- Increased need for re- or up-skilling
- Softer employment market
- Growth of private VET providers

International student enrolments will also continue to rebound

- Depreciation of Australian dollar
- Continued strong reputation

The VET market is highly fragmented with nearly 2,000 Registered Training Organisations (RTOs) participating

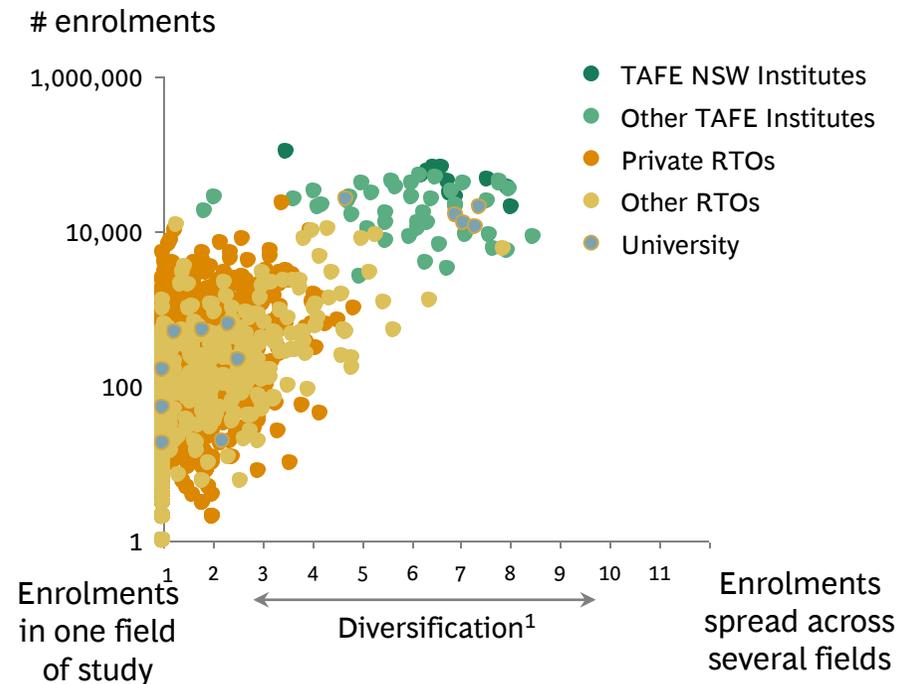
There are a range of players competing in specific parts of the market...

Type	Description	# players
Private RTOs	For profit. Wide range of provider types, from niche specialists to large scale players	~1400
Community education providers	Not for profit. Community organisations and non-profits, compete in foundation skills and entitlement qualifications	~270
Schools	Not for profit. 'Compete' with TAFEs in provision of VET to school students	~30
Enterprise RTOs	Cost centre within for profit business. 'Compete' with TAFEs in provision of VET services to businesses	~90
Industry bodies	Competitors in specialist industry areas	~80
Universities/dual sector	Not for profit. Competitors at the higher end of the VET market	~15

Different types of players have different financial and competitive bases upon which they participate in the VET market (e.g., for or not for profit, as cost centre)

...across various fields of study and with different scale

Enrolments by RTO in 2013 (log scale)

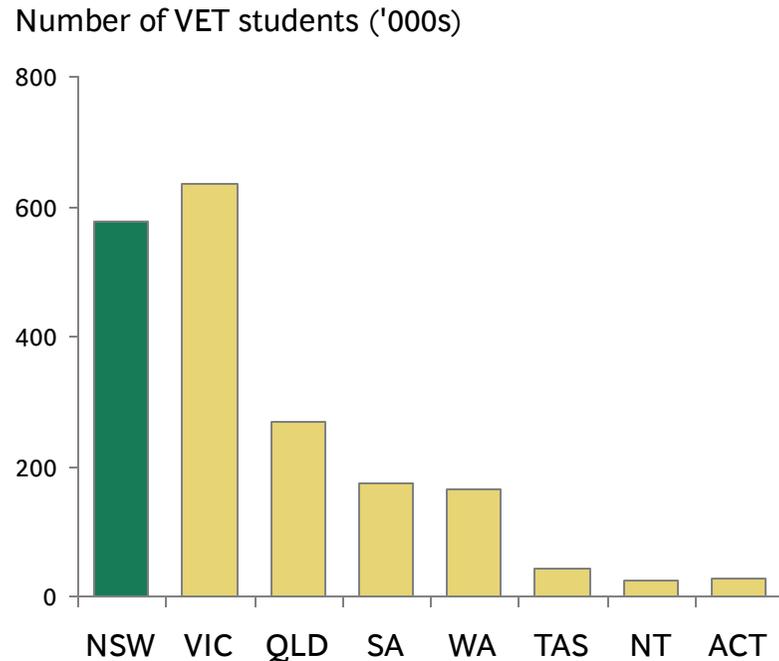


TAFE NSW competes against a large number of small, specialised players that focus on specific parts of TAFE NSW's offering—very few deliver TAFE's broad offerings

1. Diversification is measured using an inverse Herfindahl concentration index, defined as $1/H = \text{enrolments}_{\text{AllFields}}^2 / (\sum_{\text{Field}} \text{enrolments}_{\text{Field}}^2)$. This is equal to 1 if all enrolments are concentrated in a single field of education, and 12 if enrolments are evenly spread across all fields of education. RTOs with low scores may still offer courses in all fields, but will have the majority of enrolments in a few of these. Source: NCVET VOCSTATS Database; BCG analysis.

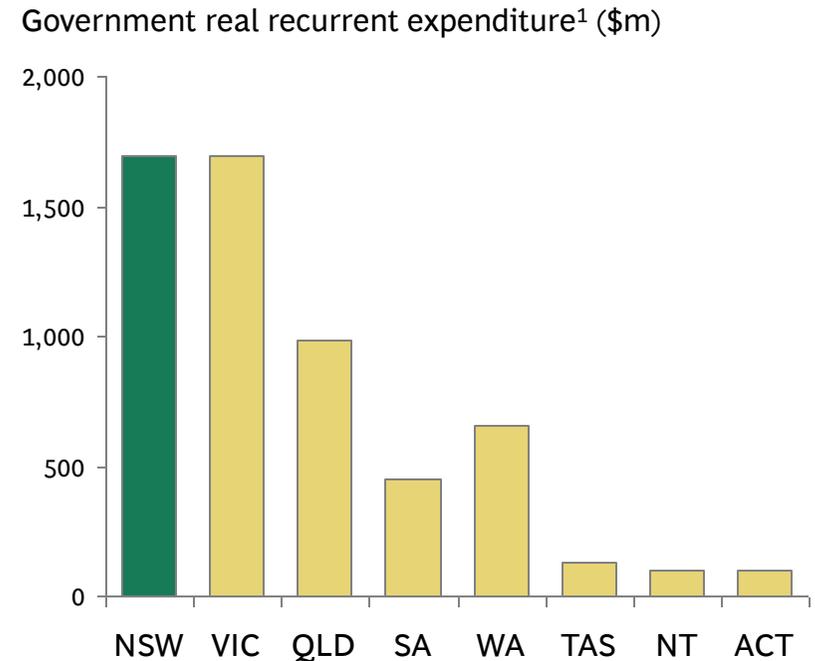
NSW is Australia's second largest VET market, with the highest rates of publicly funded education and training

**Number of VET students by state
(CY 2013)**



The number of VET students trained in Victoria has fallen, as the state moved away from a model of uncapped funding for government-subsidised positions in its 2015 changes to VET funding

**Recurrent government funding by state
(FY 2012/2013)**

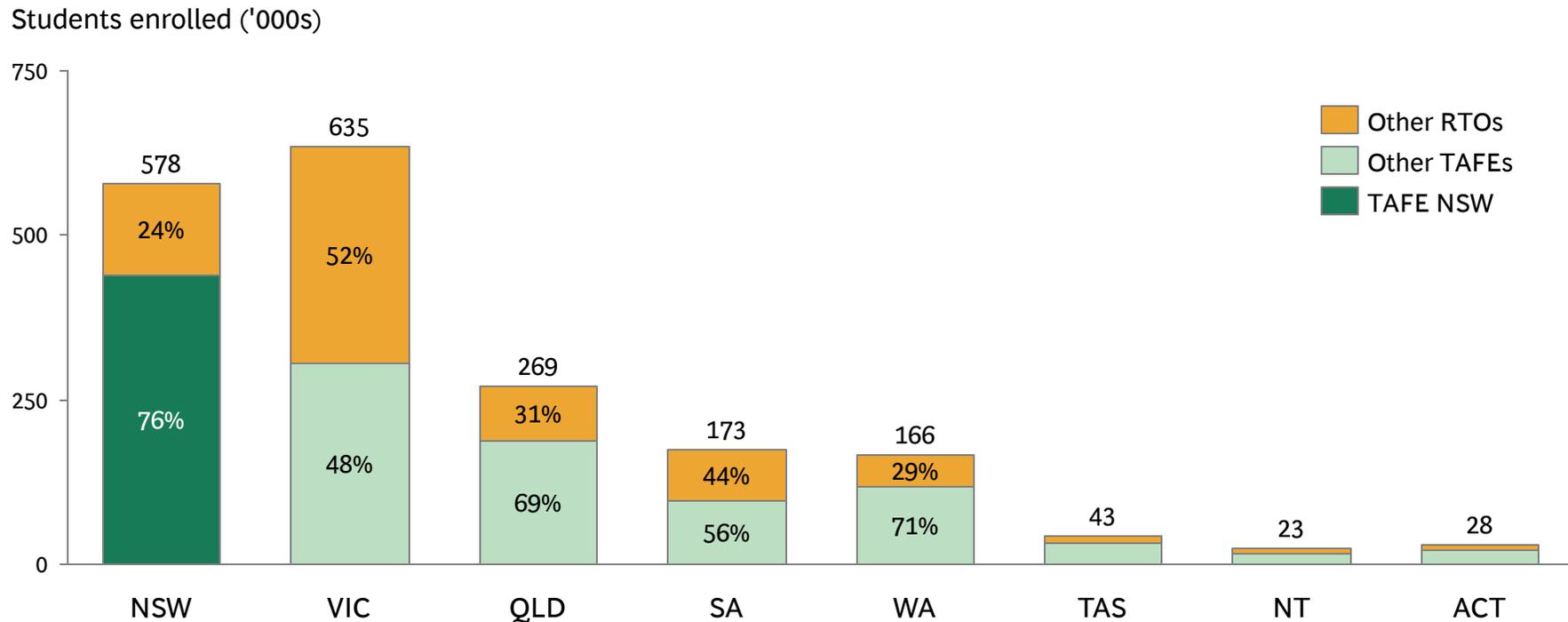


Overall government funding in the VET sector has increased over the last 5 years due to Commonwealth Government funding, especially via its VET FEE HELP policy, which has also recently been capped

1. Recurrent funds provided by the Australian Government and State and Territory governments, including funding from Commonwealth administered programs
Source: NCVET 2013; NCVET VET time series 1981 onwards; ROGS 2015; IbisWorld Industry Report P8101 (February 2015)

TAFE NSW is the largest VET provider in Australia

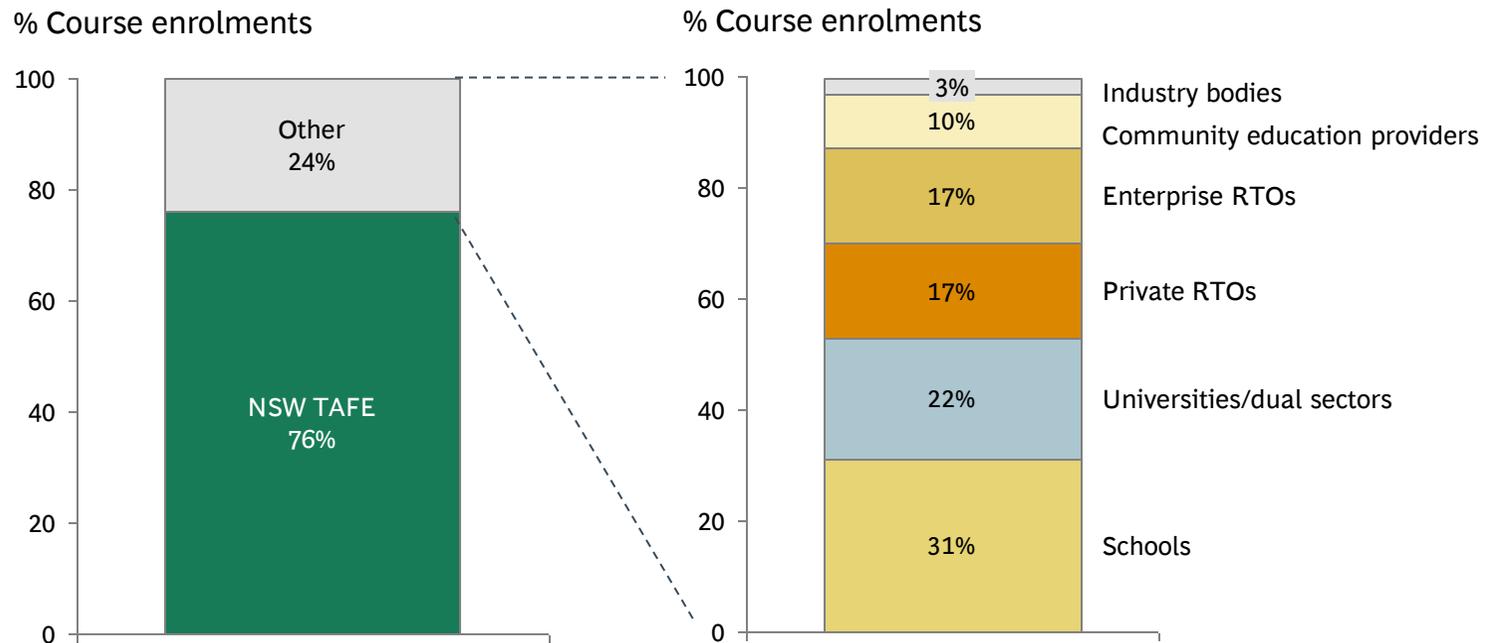
Number of students enrolled by training provider (CY 2013)



Since 2013, TAFEs have lost market share to private providers as competition in the VET sector has increased, especially in Victoria and South Australia, and to a lesser degree in NSW

NSW TAFE competes against a mix of for-profit private RTOs and a variety of not-for-profit providers

Illustrative breakdown of the NSW VET market prior to Smart & Skilled tendering



TAFE NSW's faces competition in the NSW VET market from a range of RTOs, with most not-for-profit. Significant variation exists between the financial incentives and commercial behaviour of the different types of RTOs (e.g., enterprise RTOs are often cost centres in larger organisations; industry bodies, schools, and universities are typically not-for-profit). It is expected that after the next round of Smart and Skilled tendering in 2017, private RTOs will make up a larger share of the market

Note: Student enrolments for Enterprise RTOs were not reported until January 2015.

Source: NCVET data (2009-2013); Productivity Commission Research Report on Vocational Education and Training Workforce (April 2011); Department of Education Higher Education Statistics (2013)

The VET market can be described from three perspectives

1 VET purchasers

Who pays for VET services, and how do they pay?

Description

- Purchasing decision-makers
 - Students
 - Employers
- Traditional funding sources
 - Government-funded positions
 - Domestic full fee paying
- Other commercial markets
 - Inbound and offshore international
 - Higher education
 - VET in schools
 - Interstate online

Industry trends

- Deregulation of the VET sector will increase competition in traditional government-funded and adjacent markets
- May result in loss of market share for TAFEs that have historically operated with near monopolies on government-funded VET

2 VET students

Who are the customers of vocational education and training?

Description

- "Premium" students
 - Niche education seekers with a focus on quality / reputation
- "Value" students
 - Quality education seekers
- "Price-sensitive" students
 - Willing to trade quality for price as qualification most important
- "Agnostic" students
 - Susceptible to 'push' factors (e.g., brokers, government requirements)
 - Often more vulnerable groups

Industry trends

- Increasing product differentiation by segments, with private players targeting specific needs and purchasing decision criteria (e.g., job placement services, use of brokers)
- Differentiation will lead to different types of competition between and within student 'segments'

3 Educational offerings

What are the fields of study and VET qualifications offered?

Description

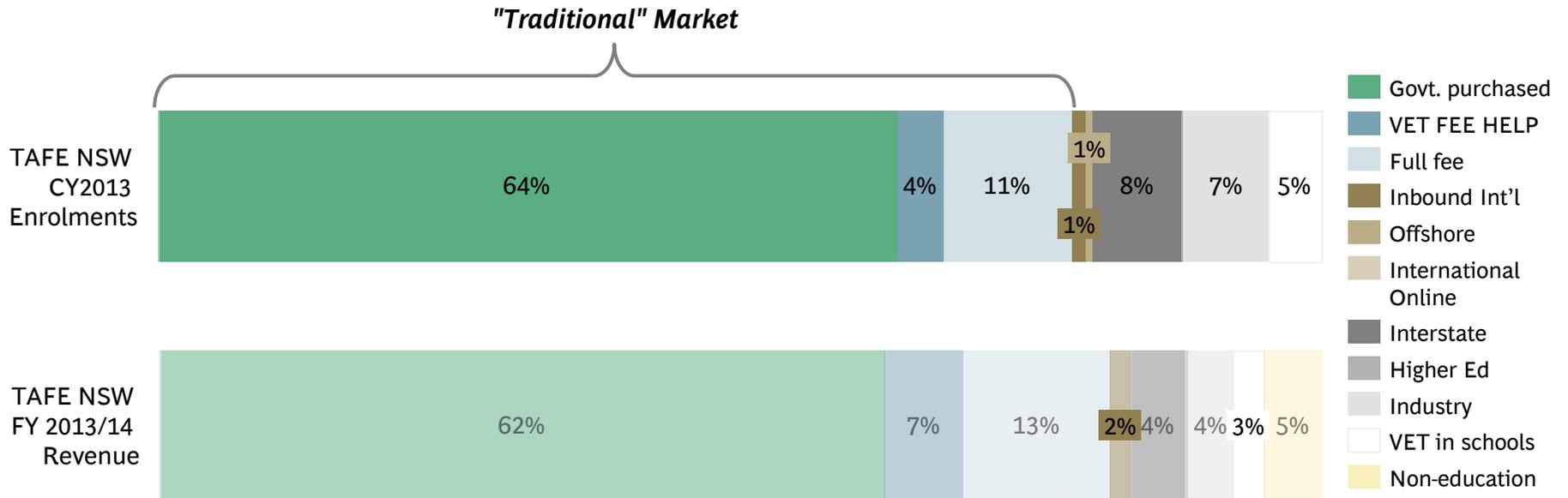
- Level of qualification:
 - Courses with different levels of qualification, including non-AQF (e.g., not government assured or accredited) courses, Certificates I-IV and degree-type courses
- Field of education:
 - Distinct fields of study, e.g. education, science, health, arts, agriculture, hospitality, IT

Industry trends

- Market is dominated by Certificate III and below qualifications where competition is growing and often lower barriers to entry
- Risk VET providers lose market share to universities in Certificate IV and above, as universities expand offering
- New players using lower cost deliver models (e.g., on-the-job, simulation), removing traditional barriers to entry

Most of TAFE NSW's business is purchased in 'traditional' markets, which are becoming increasingly competitive

Purchasers of TAFE NSW education & training by CY 2013 enrolments and FY 2013/2014 revenue



Government-funded or -purchased

~2/3 of TAFE NSW's revenue was traditionally direct government funding. In 2014, the Smart & Skilled reforms made funding for some lower level qualifications contestable, with TAFE NSW winning right to deliver more than 80%

Fee-for-service

Further 20% of TAFE NSW's revenue and 15% of enrolments were from domestic students, either personally funding their study or taking out VET FEE HELP loans, with this group increasingly competitive as private players expand in NSW

Note: "Interstate Online" includes ~150 international online enrolments which have been assumed to be enrolments from New Zealand.
 Source: TAFE NSW enrolment and financial data; BCG analysis.

Most of TAFE NSW's students are value and price-sensitive customers, where increased competition is expected

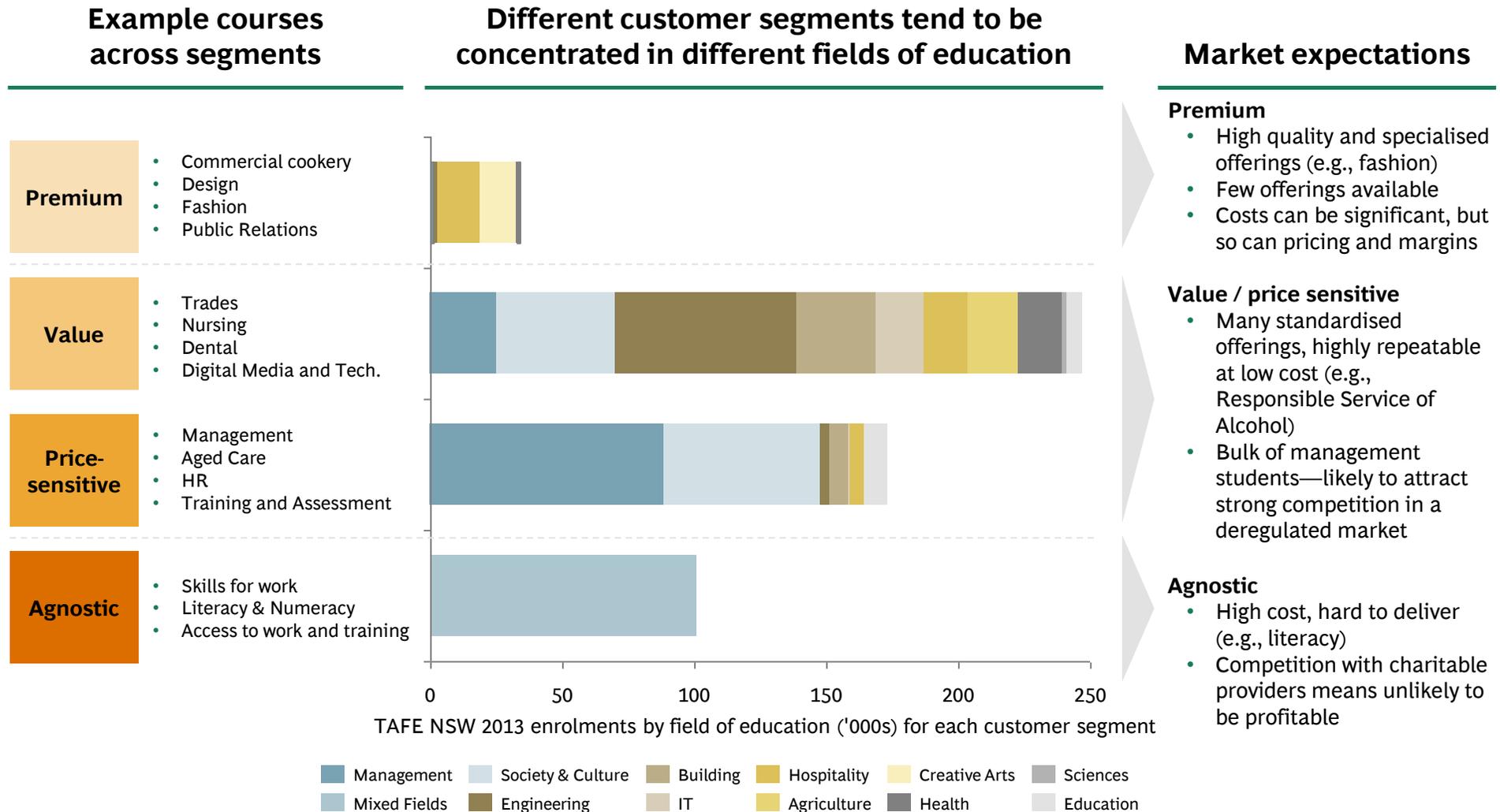
Customer segments

Competitive dynamics

Customer segments		Competitive dynamics
Premium <i>Niche education seekers, with a focus on quality</i>	TAFE NSW enrolments 5–10% <ul style="list-style-type: none"> Quality of education and expertise/reputation of provider are primary decision factors Price and convenience less important – willing to pay a quality premium 	High-quality providers focused on a subset of courses with price premiums based on strong brands and reputations, resulting in high margins
Value <i>Quality seekers, with an eye on value</i>	40–50% <ul style="list-style-type: none"> Concerned about quality of education/provider reputation Value-conscious: price is still a decision factor Convenience (e.g., location and scheduling) are important 	Large reputable providers who leverage scale to offer value. More providers, especially private, are moving into this space
Price-sensitive <i>Seek low-cost qualification</i>	25-35% <ul style="list-style-type: none"> Primary concern is obtaining a qualification, rather than necessarily the quality of that qualification Price is very important and willing to trade quality for it Convenience is a key driver of choice 	Highly "adaptive" providers, serving bottom two segments in innovative ways
Agnostic <i>Highly susceptible to "push factors"</i>	15–20% <ul style="list-style-type: none"> Agnostic to quality/price concerns or have limited agency Highly susceptible to aggressive recruitment strategies External organisations (Centrelink, migration agents) are primary decision maker/influencer on customer choice 	Faith-based and mission-driven (altruistic) providers often serving customers at low rates and with broader charitable goals

Providers are defining their competitive advantage by identifying and tailoring their offerings to specific customer segments

Each customer segment tends to have concentrations in particular fields of education



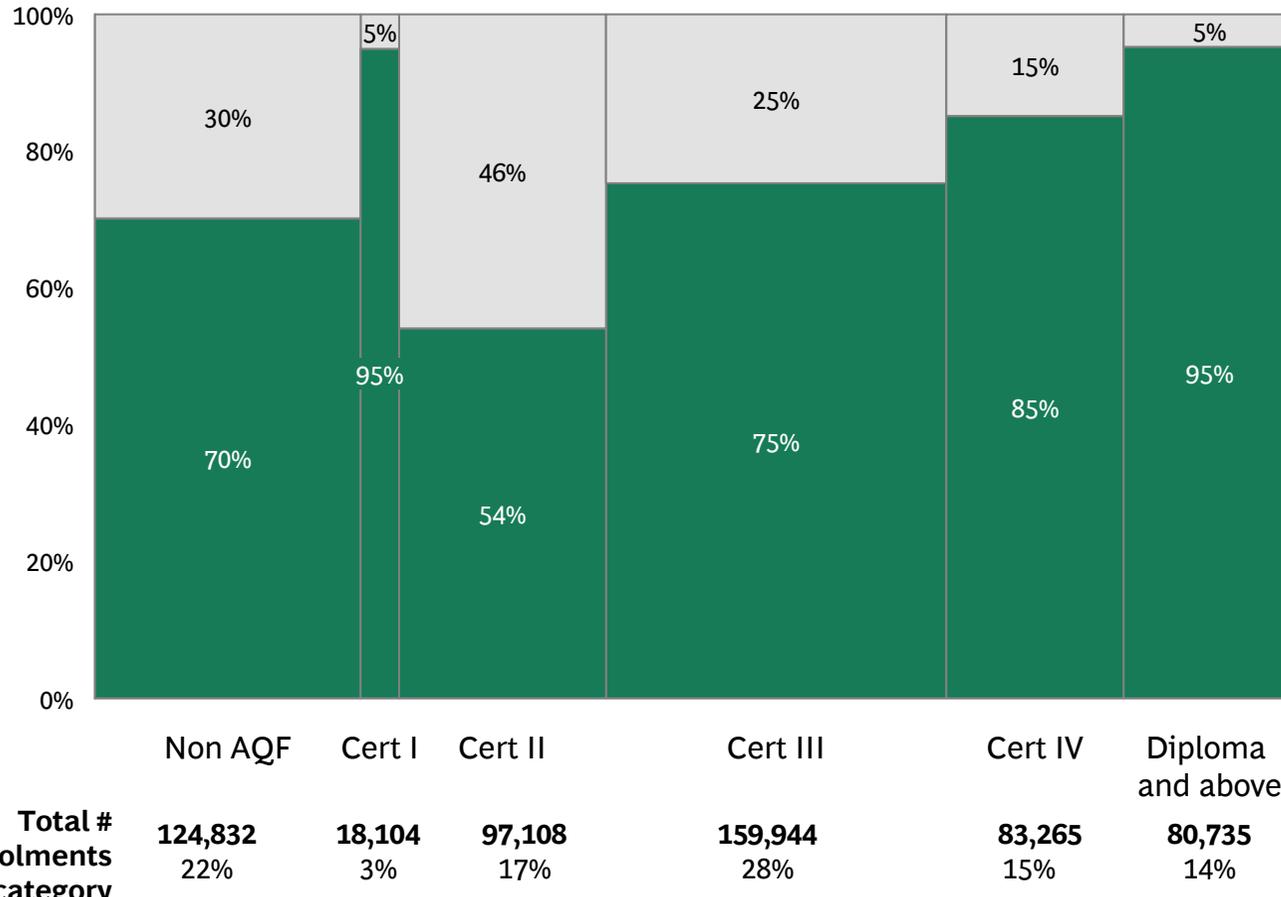
Note: Mapping is indicative only and not intended to represent comprehensive allocation of specific courses to segments

Source: TAFE NSW 2013 data; BCG analysis

NSW market is dominated by Certificate III and below courses, where TAFE NSW is likely to face heavy competition

TAFE NSW share of NSW VET market by Certificate Category (2013)

% market share within CERT category



TAFE NSW has strong market share in lower level qualifications (e.g., Certificate III and below)

- These qualifications are expected to face strong competition in the future

In higher qualifications (Certificate IV and Diploma), TAFE NSW has a larger share of the market

- May face increased competition from universities as they attract students to new 'degree' courses

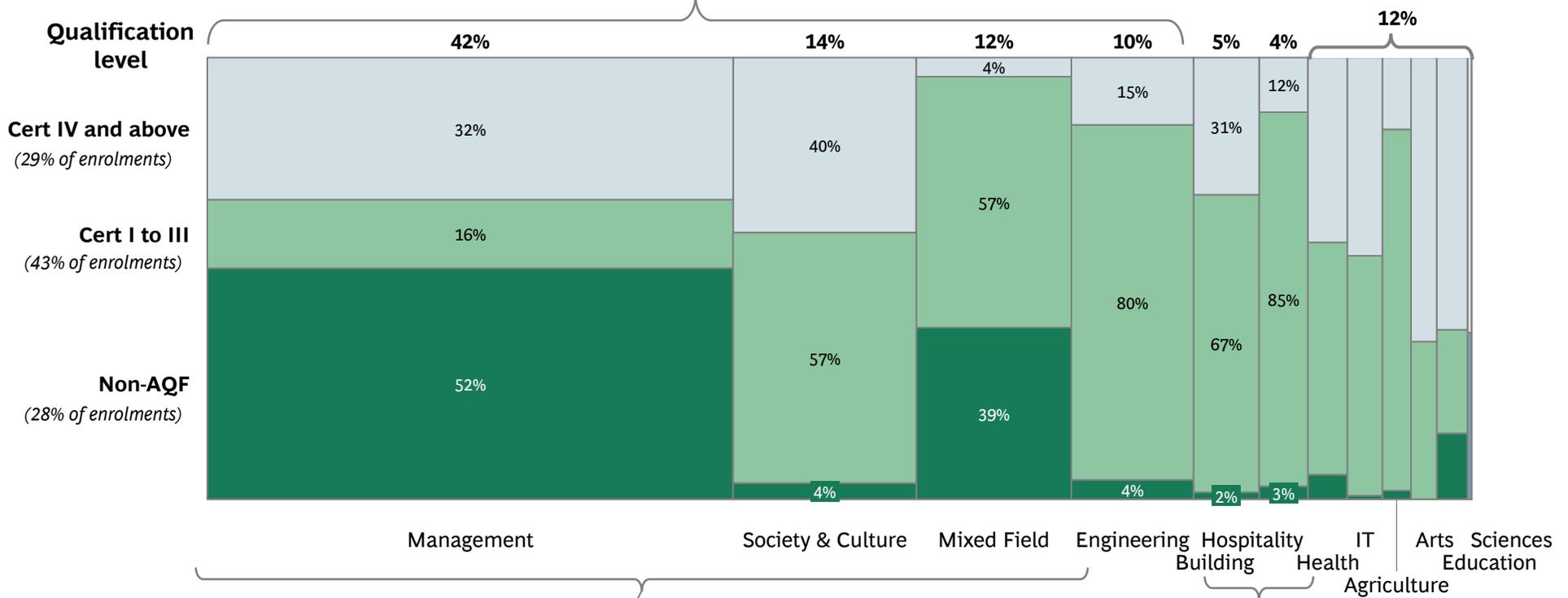
Other providers
(~139,000 total enrolments)

TAFE NSW
(~425,000 total enrolments)

~80% of TAFE NSW's enrolments are in four fields of education

TAFE NSW's enrolments by course and certificate type (2013)

~80% of TAFE's enrolments are in four fields that faced heaviest competition in other states following deregulation



Metropolitan institutes' enrolments are concentrated in the top four fields

Regional institutes have a larger share of enrolments in Building and Hospitality

Source: TAFE NSW 2013 Enrolment Data

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Changing student and employer preferences mean TAFE NSW will need to evolve its offering to remain competitive

TAFE NSW is very well regarded in the VET market, delivering a strong product that is highly valued by students and employers alike. However, the market is shifting as student and employer expectations change and TAFE NSW lags the competition in responding to these market changes.

Students and employers increasingly value attributes beyond teaching quality, such as convenience, support with job placement, and flexibility (pg 20). While TAFE NSW has a strong reputation overall and especially for its teaching and assessment, it lags competitors on convenience, cost, and its ability to market to and attract prospective students. Other competitors also have strong reputations for teaching and assessment (pg 21).

Among students, TAFE NSW lags its competitors on important metrics, such as on job placement, which for ~80% of students is their reason for studying (pg 23). Among employers, TAFE NSW lags the market leader by 4-8% points on priority issues for employers, such as flexibility, cost effectiveness, skill relevance, facilities, and assessments (pg 24).

Students are also seeking more convenient, flexible and technologically-enabled delivery models – particularly blending classroom and online learning models – with the online VET market growing at 5% per year for the last five years. Online and blended models are increasingly valued by students for their flexibility and compatibility with student learning styles (pg 25).

While TAFE NSW has a very successful online platform, Open Training and Education Network (OTEN), only ~20% of TAFE's courses overall are offered via blended learning. This contrasts with competitors which offer 50-60% of comparable courses online. A majority of students are seeking blended options (pg 26).

TAFE NSW lags other states, especially Victoria, in share of enrolments *not* funded by government (except interstate online) (pg 27). The international student market has grown 13% in the past decade and is expected to continue to grow at a rate of 3-5% over the next five years. However, TAFE NSW historically has not capitalised on this growth or student preference for Sydney as an educational destination. NSW's share of the Australian international student market has declined and TAFE NSW's share of the international student market in NSW is low and stagnant at 7%, lagging leading interstate TAFEs by up to 3ppt for international students and up to 8% for offshore delivery (pg 28-29).

Students and employers have different views on key elements of quality in the provision of VET services

Key quality elements valued from VET (not TAFE NSW specifically)

Students

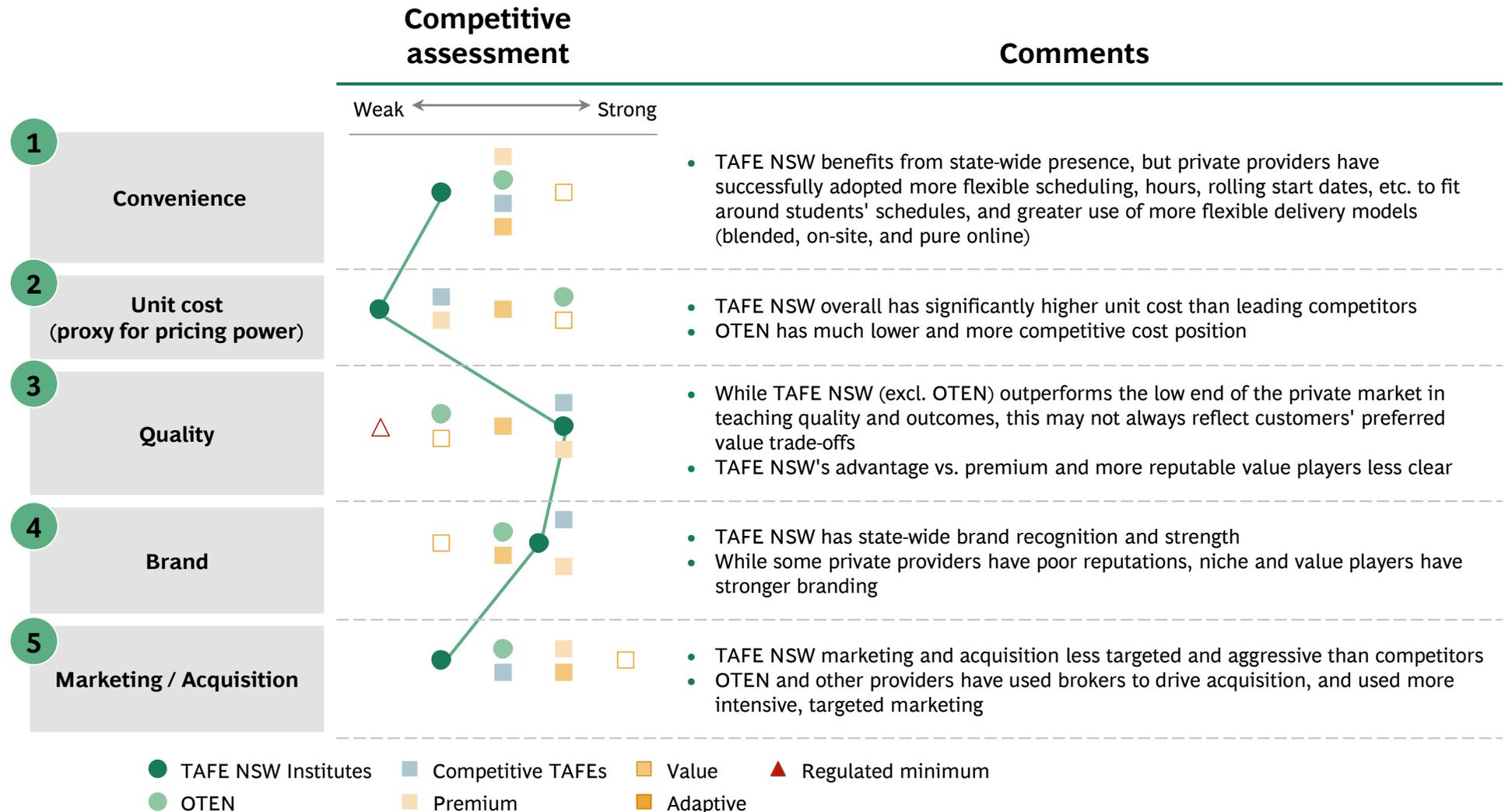
- **Teachers:** Teachers are **attentive** to student needs, provide **individual support** to students, have **knowledge of industry**
- **Job outcomes:** Training **enables job placement**, skills taught are sought by employers, teachers / department has industry linkages
- **Convenience:** Length of course **prevents extended time out of work**, class times allow work-study balance and **flexibility** to attend courses when suits, **location** reduces down-time due to travel

Employers

- **Relevance:** Skills taught are **relevant to employers' work**, and teachers have **industry knowledge**
- **Standards:** Training **enables the student to do the job well**, and **assessment is rigorous**; qualification enables the employer to **meet regulatory or licensing requirements**
- **Convenience:** Provision of training **is flexible** to meet employer requirements, e.g. options for **blended/online**, **class times fit work** schedule, and **location reduces down-time** due to travel

Students often do not have good information about the quality of different offerings when making VET purchasing decisions. Clear and targeted marketing of strengths and areas of differentiation will become increasingly important as competition and non-government participation increases

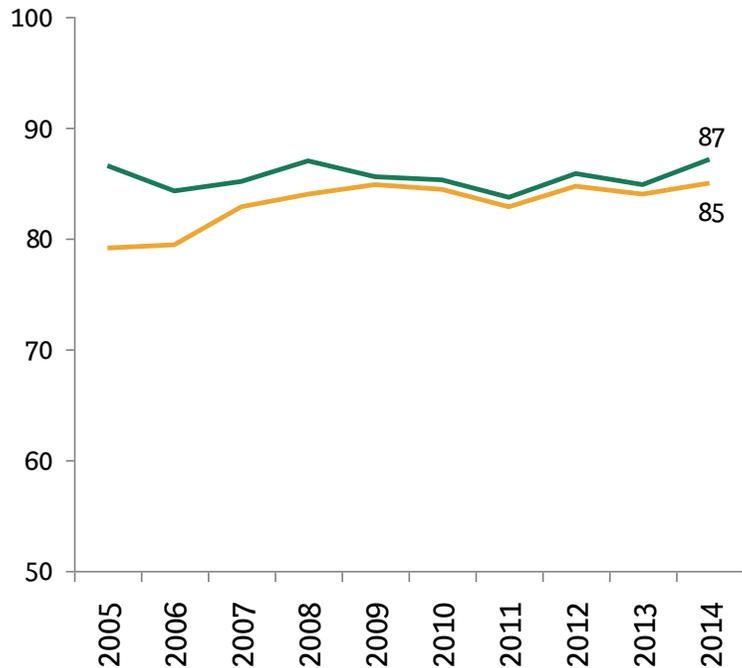
TAFE NSW has a strong (but not unique) reputation for quality, but lags on convenience, cost and marketing capabilities



Students are slightly more satisfied with the overall quality of training at TAFE NSW than at competition

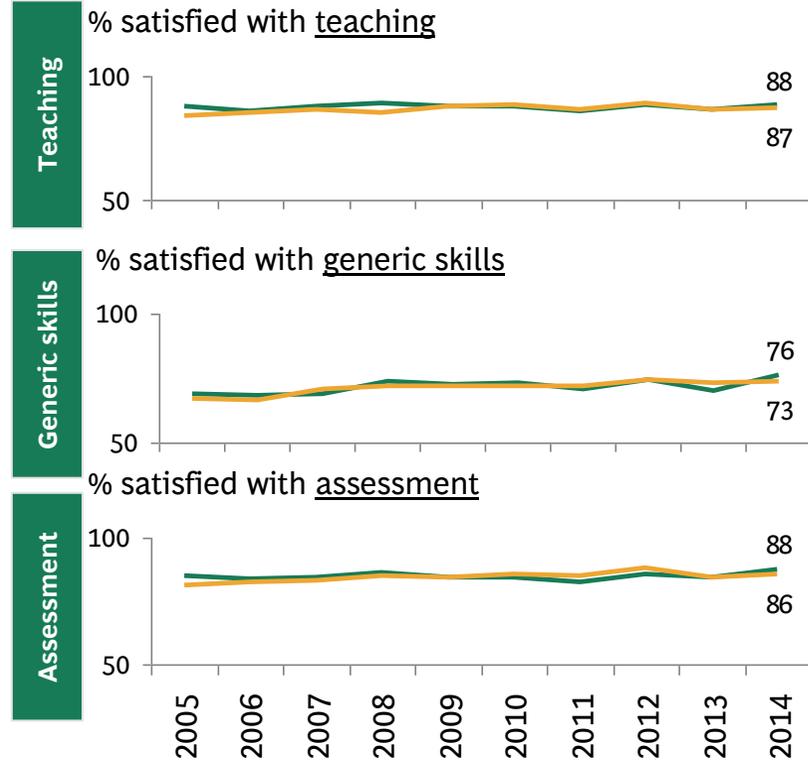
TAFE NSW outperforms private providers in overall student satisfaction

% satisfied with overall quality of training



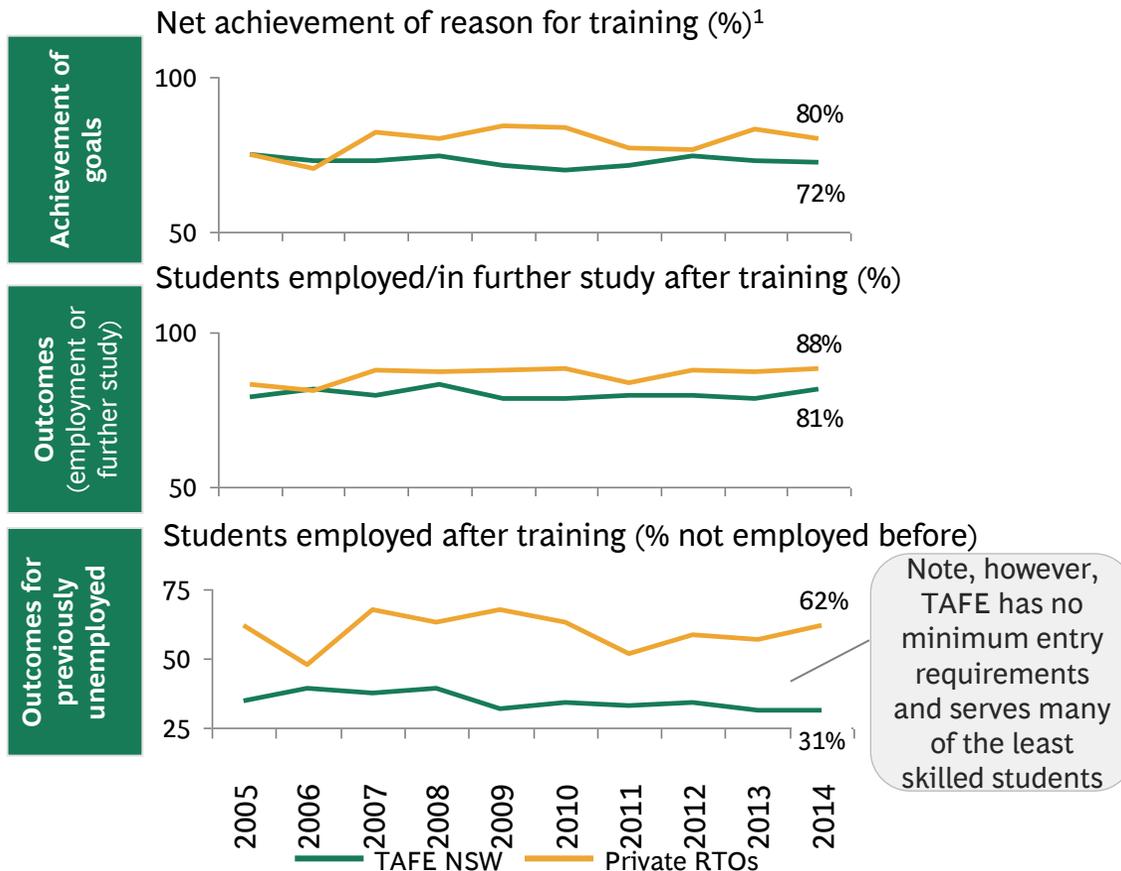
— TAFE NSW
— Private RTOs

Although advantage is more marginal in terms of specific satisfaction drivers



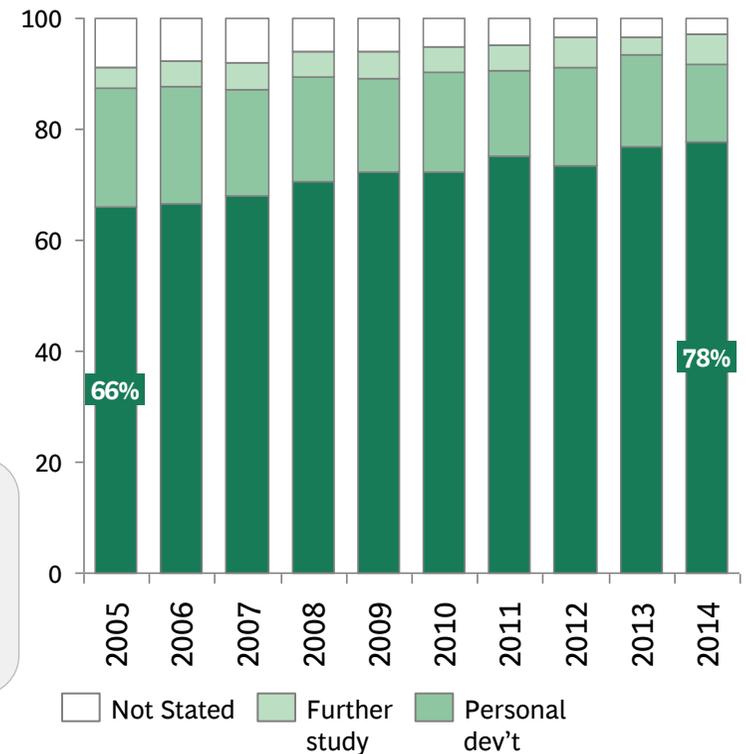
However, TAFE NSW lags in achievement of training outcomes increasingly valued by students (e.g., getting a job)

TAFE NSW lags private providers in achieving students' goals, and job/further study outcomes



Employment outcomes are becoming more important over time

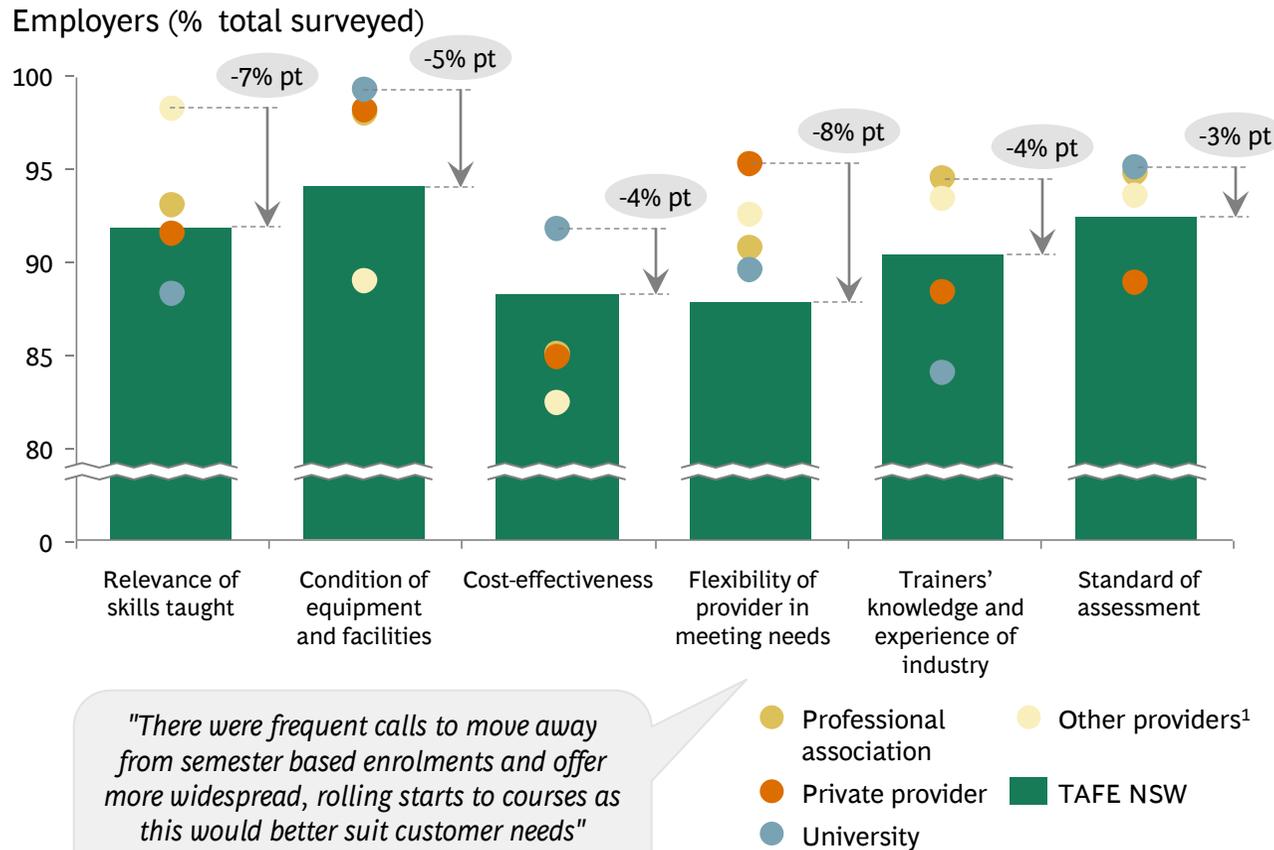
Reason for undertaking training (% NSW respondents)



1. Percentage of students who fully or partially achieved their main reason for training less percentage of students who did not achieve their main reason for training
Source: NCVET VOCSTATS database

While employers are relatively satisfied with TAFE NSW, it trails at least one competitor in all key employer criteria

Employers' satisfaction with training provision (Australia-wide)



"There were frequent calls to move away from semester based enrolments and offer more widespread, rolling starts to courses as this would better suit customer needs"

- Let's Talk about TAFE, 2013

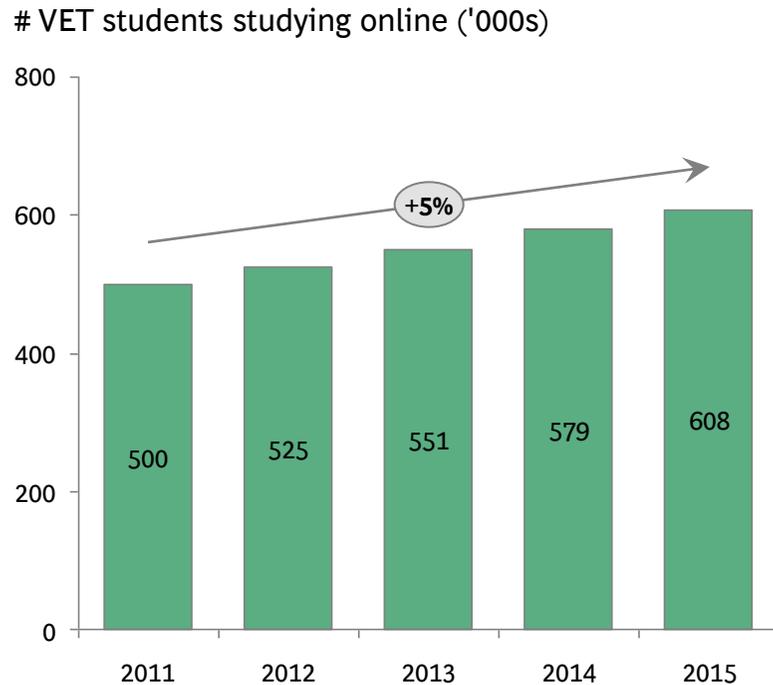
Employer perceptions of TAFE NSW:

- TAFE NSW has the least flexibility of provider types (8% pts lower than private providers)
- TAFE NSW's educator knowledge and industry experience and relevance of skills taught are lower than the best (4% and 7% pts lower than professional associations) but better than for-profits
- TAFE NSW's equipment and facilities are lower quality than most competitors (5% pts lower than private, university, and professional association providers)

1. Other providers used for training apprentices and trainees include suppliers/manufacturers of equipment/product or other providers
Source: NCVER, Employers' Use and Views of the VET System 2013

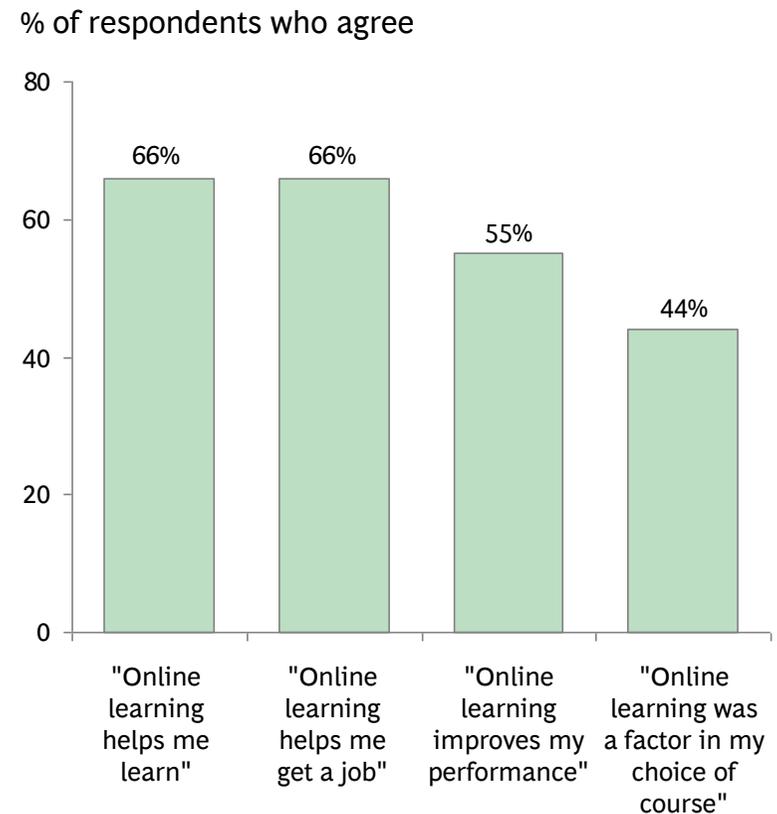
Online training is a growing market which students value

Online VET is a sizeable market, growing at 5% a year...



OTEN and TAFE NSW's other online businesses, if counted together, are the biggest online VET provider in Australia

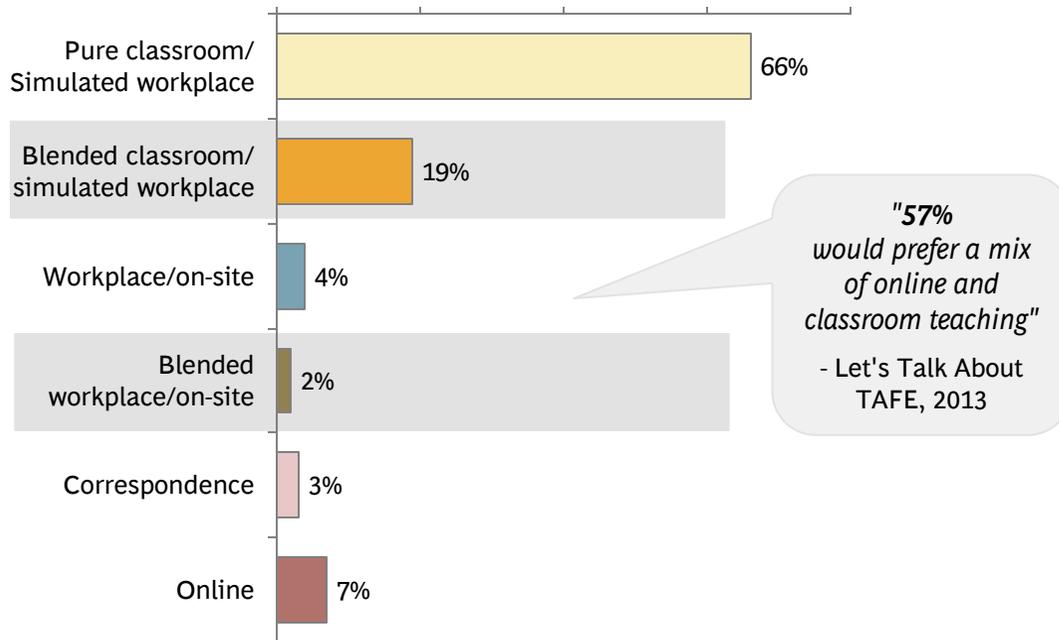
... and is highly valued by VET students for many reasons



Only 20% of TAFE NSW delivery is blended (mix of online & classroom), while competitors offer up to 50-60% blended

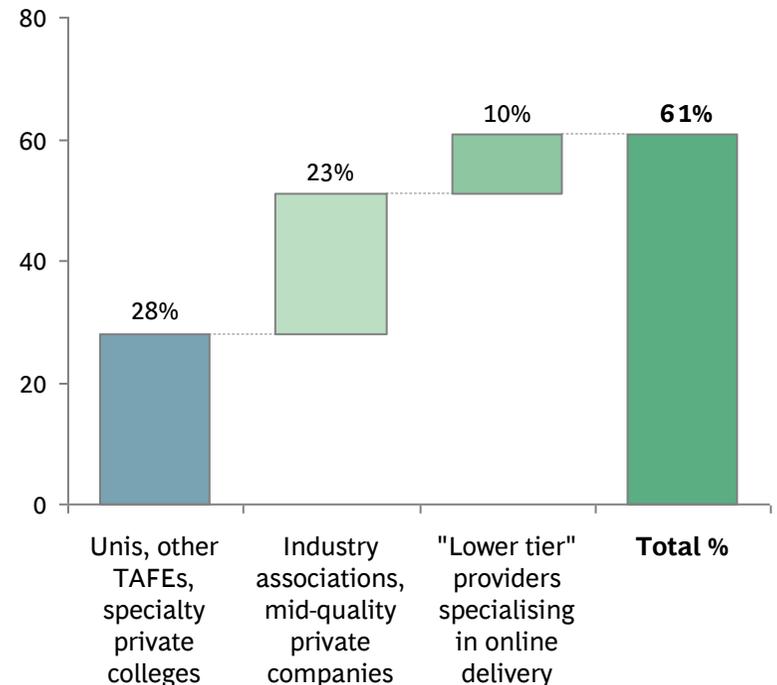
NSW TAFE curriculum primarily occurs in classroom or simulated workplace settings...

Share of TAFE NSW delivery (% annual student hour)



...While competitors are making greater use of flexible, online delivery for the same courses

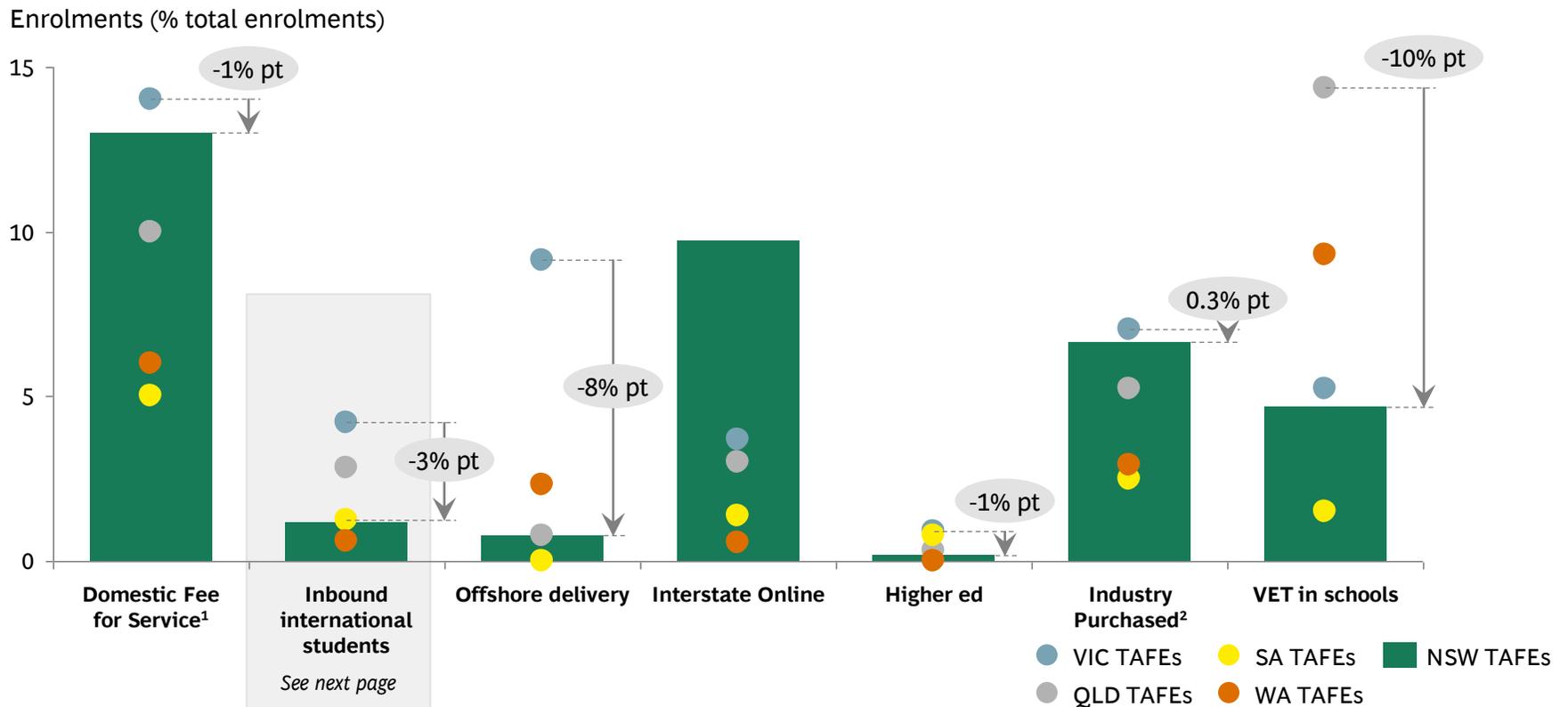
% TAFE NSW training that other providers offer online



Despite successes of OTEN, TAFE NSW has not blended online into traditional courses or consolidated its digital business to maximise scale

TAFE NSW lags other states, especially Victoria, in share of enrolments *not* funded by government (except interstate online)

Proportion of total TAFE enrolments in select market segments, by state

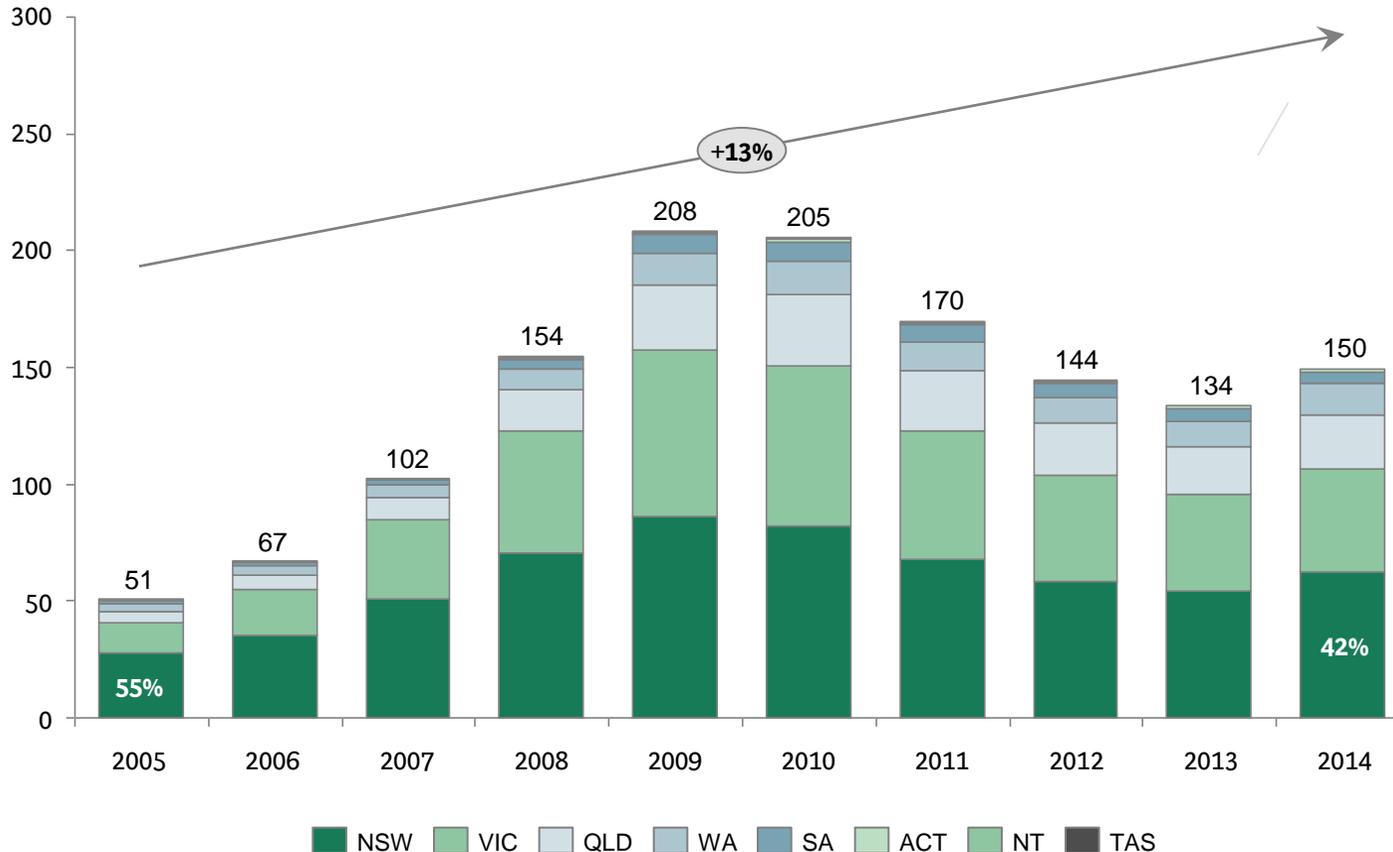


1. Includes both VET FEE Help and Full Fee Paying. 2. Benchmarks assume TAFE NSW split of fee-for-service enrolments between B2C and Industry Purchased. Industry Purchased is all non-government subsidised training purchased by employers

Note: Proportions based on CY13 enrolments for all TAFE Institutes in each state listed. Source: NCVER VOCSTATS database; TAFE NSW enrolment data; BCG analysis

NSW's share of an overall growing international student market has declined from 55% in 2005 to 42% in 2014

International student VET enrolments by state ('000s)



2010-2013 downturn driven by:

- Student visa changes (tighter financial rules)
- Changes to Skilled Migration Program
- Rise of Australian dollar (higher living costs)
- Reputational factors, including violence against Indian students
- Increasing challenge from competing countries

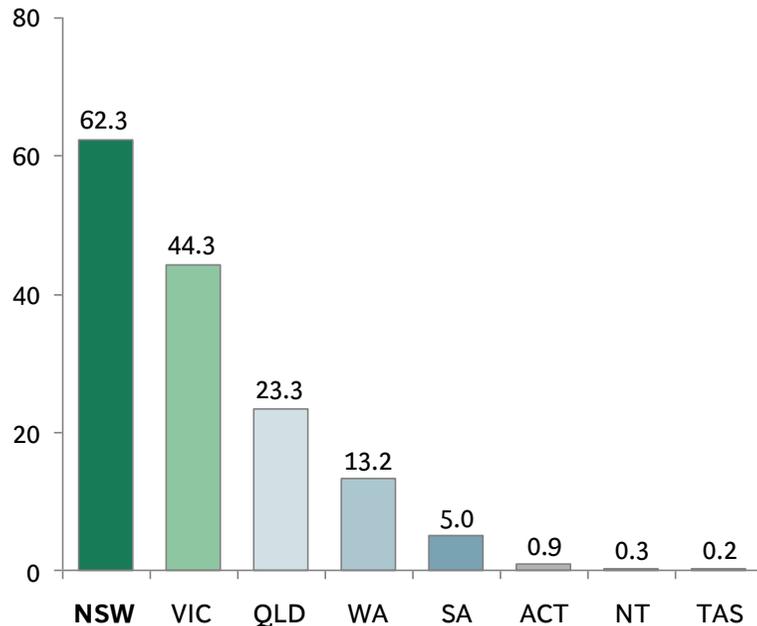
But future growth is expected:

- International student enrolment expected to grow at a rate of 3-5% in the next five years
- Primarily due to depreciation of the Australian dollar

TAFE NSW's share of the international student market is very low, and flat, despite NSW being a premier destination

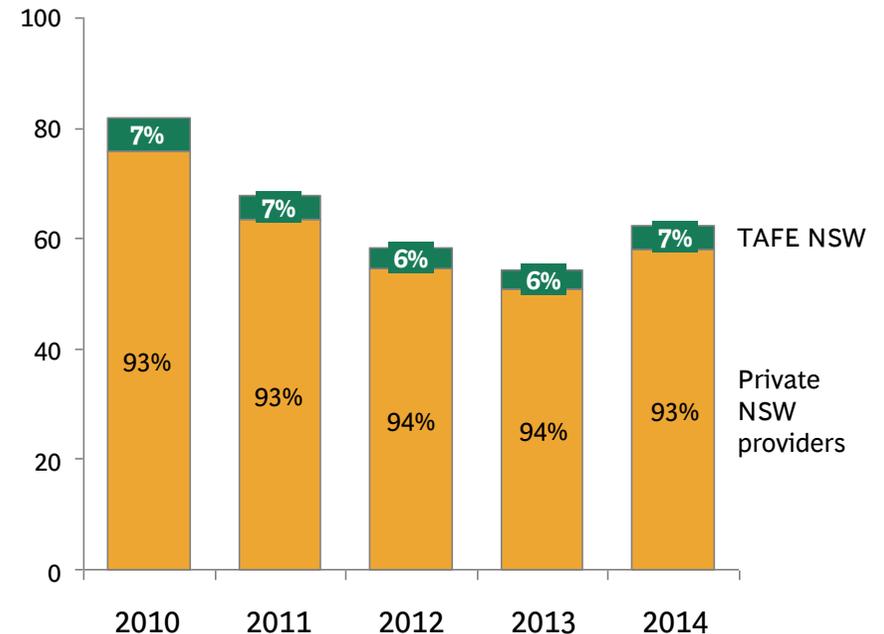
NSW is the largest Australian market for international students

2014 International student VET enrolments ('000s)



TAFE NSW's share has remained stable over the past 5 years at only 7%

2014 International student VET enrolments in NSW ('000s)



In comparison, Victoria and Queensland TAFEs have 16% and 15%, respectively, of their states' international VET student market

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TAFE NSW's productivity and cost structure is uncompetitive, further challenging its market position

Currently TAFE NSW is at a significant productivity and cost disadvantage versus its competitors and other providers in the VET market, including interstate TAFEs.

On a productivity basis (i.e., total unit cost basis), which often forms the basis for pricing in a high fixed cost business, TAFE NSW is estimated at being around one and a half times the total unit cost of interstate TAFEs, and double the total unit cost of the most efficient reputable private RTOs (pg 32).

Over half of TAFE NSW's costs are fixed in the short to medium term, particularly its assets, labour and administrative overhead costs, making TAFE NSW's total unit cost highly sensitive to falls in enrolments given the limited ability to reduce cost quickly (pg 33).

The cost of an hour taught by a full time TAFE NSW teacher is up to 50% higher than other TAFEs, and up to double that of reputable private competitors (pg 35-36), with the majority of the difference driven by much lower productivity in terms of the hours taught per year (pg 34).

The cost per hour of other categories of TAFE NSW staff, including educational managers, casual teachers, and administrative staff, is also significantly higher than other TAFEs and private providers (pg . 37-38)

TAFE NSW's asset costs per unit are up to two and a half times those of the most competitive TAFEs around Australia despite its large scale (pg 39), with relatively low utilisation of its assets (e.g., very small number of classes taught on Fridays, or year-round) (pg 40). The large asset base is driven by the extensive and overlapping geographic network of TAFE NSW Institutes and its primary delivery mode being classroom teaching, with limited blended offerings (pg 41-42).

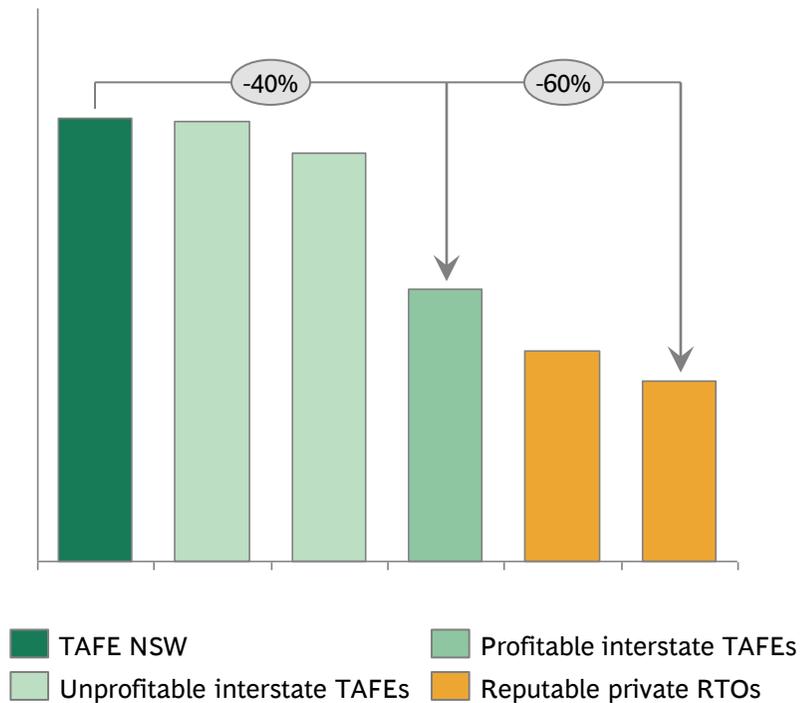
The administrative structure within TAFE NSW of 10 business units (Institutes) results in duplicated functions in each region, especially in administrative overhead. Multiple online offerings at the Institute level further add overhead and confuse TAFE NSW's offering in the digital marketplace (pg 43). Each Institute also delivers the full breadth of course types, with significant duplication of courses with low uptake (e.g., ~1,000 courses have less than 25 enrolments), further impacting productivity (pg 44-45). Many of these business units also appear sub-scale to successfully compete in a contestable market, given the experience of TAFEs in other states and universities with similar enrolment levels and breadth of fields of education (pg. 46-47).

Note: this productivity and cost analysis was derived from TAFE NSW databases, publicly-available competitors and industry benchmarks that BCG triangulated using industry and annual reports, stakeholder interviews, and TAFE NSW experience.

TAFE NSW's unit cost per enrolment is double that of reputable private sector competitors

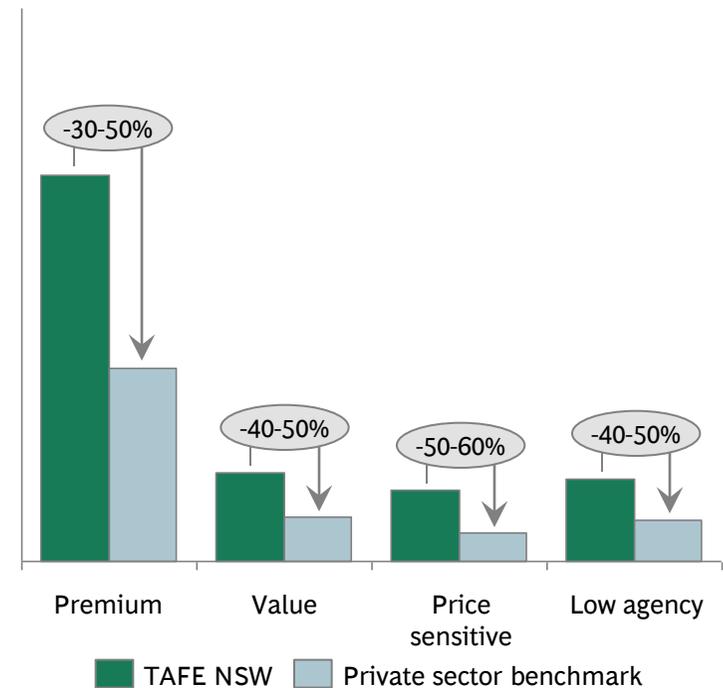
Reputable VET providers in Australia are 40% to 60% lower unit cost than TAFE NSW

2013 cost per enrolment



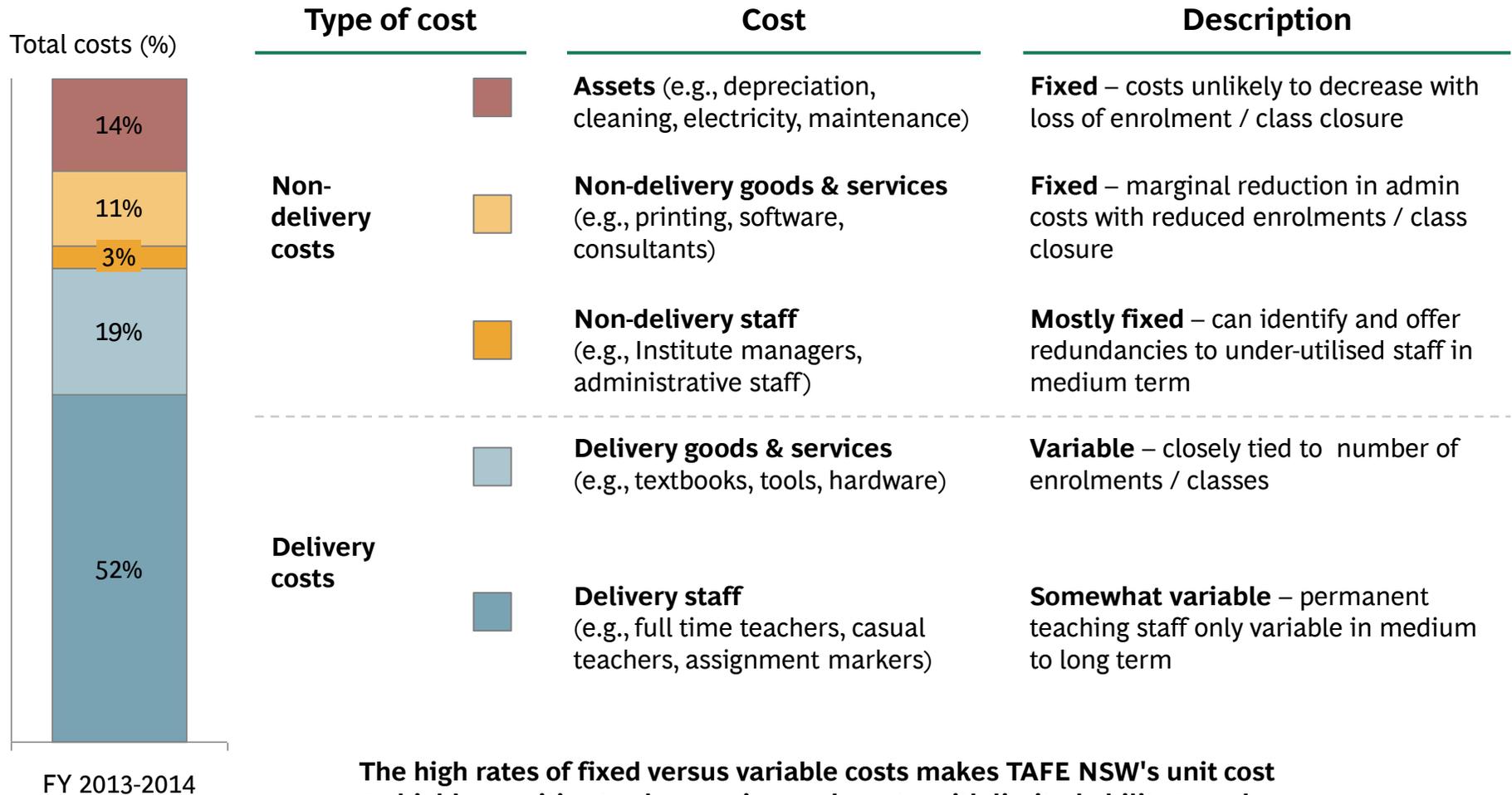
Reputable private providers have lower unit costs across all customer segments

2013 cost per enrolment



Source: TAFE NSW FY13 financial data, NCVET CY13 enrolment data, FY13 annual reports of reputable private sector players, BCG analysis

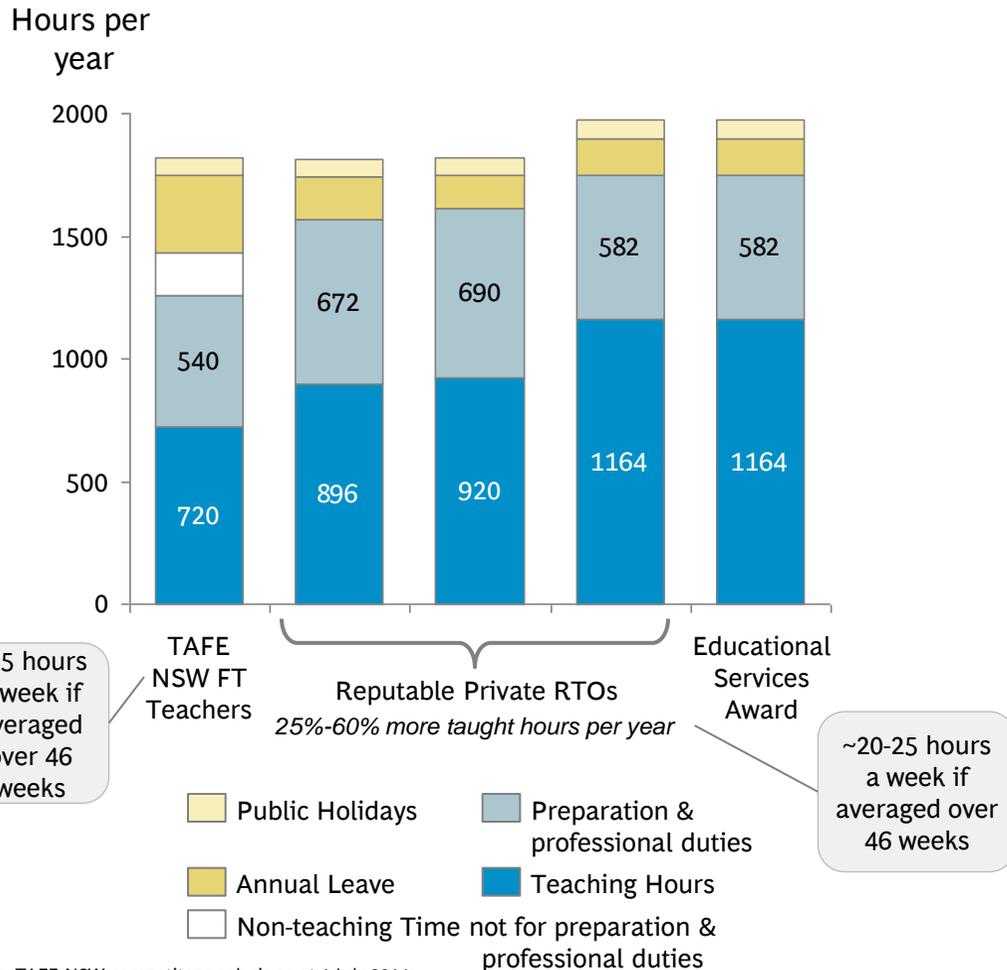
Only 3% of TAFE NSW's costs are directly variable, while more than half are fixed in short to medium term



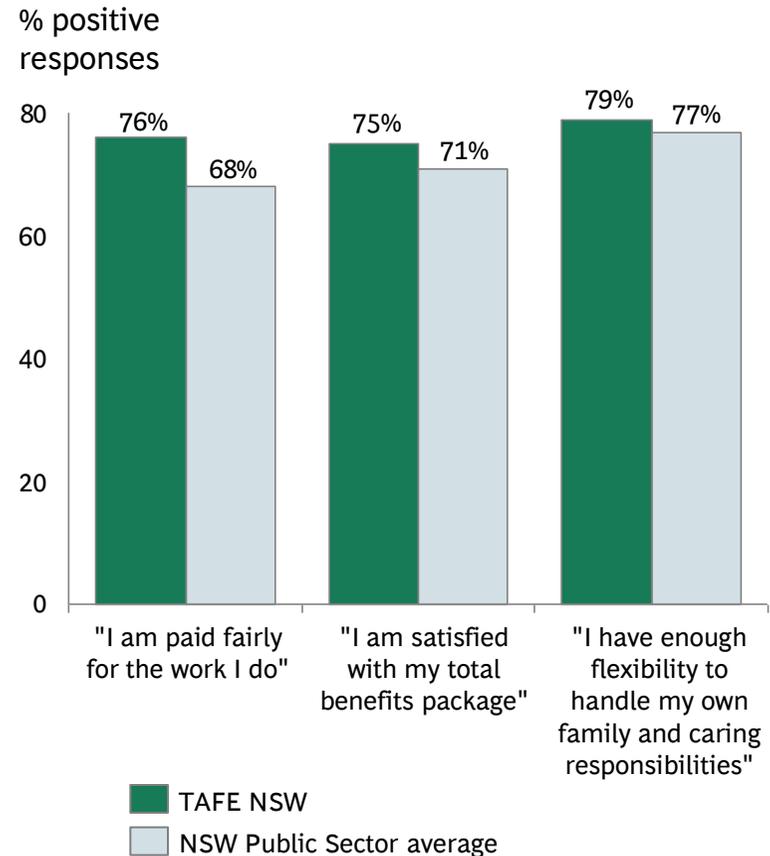
The high rates of fixed versus variable costs makes TAFE NSW's unit cost rate highly sensitive to changes in enrolments, with limited ability to reduce cost quickly overall and in subject areas when demand falls

TAFE NSW teachers teach and prepare fewer hours per year than others

Agreed full time teacher hours: various VET providers

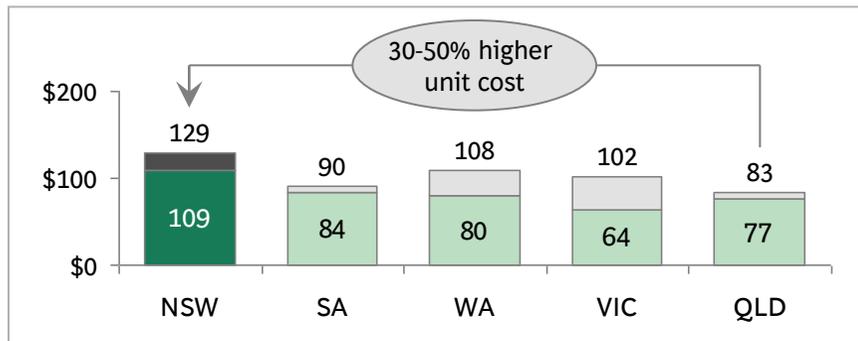


TAFE NSW employees more positive on compensation than public sector average



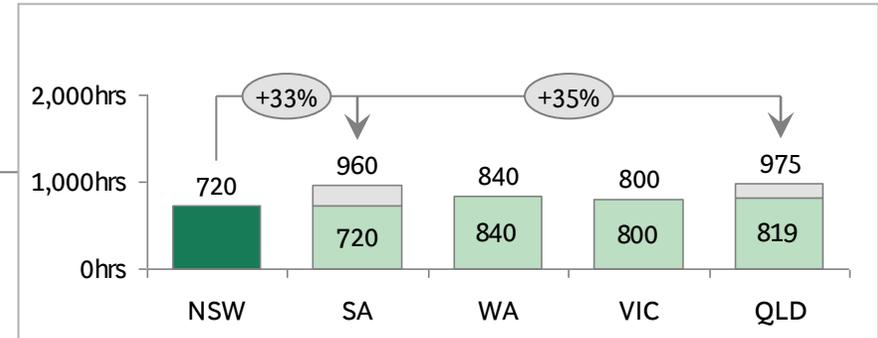
TAFE NSW teacher productivity is low: Unit costs per hour taught are up to 50% more than other TAFEs

Unit cost per hour taught: full-time

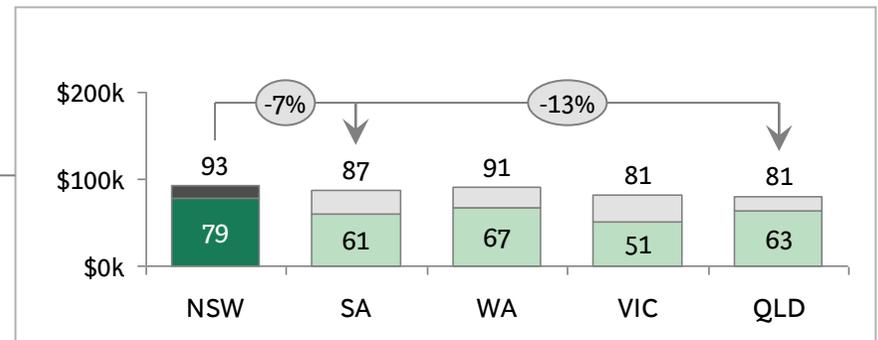


Full-time teachers at other TAFEs teach up to 35% more hours per year

Teaching hours per year



Salary range



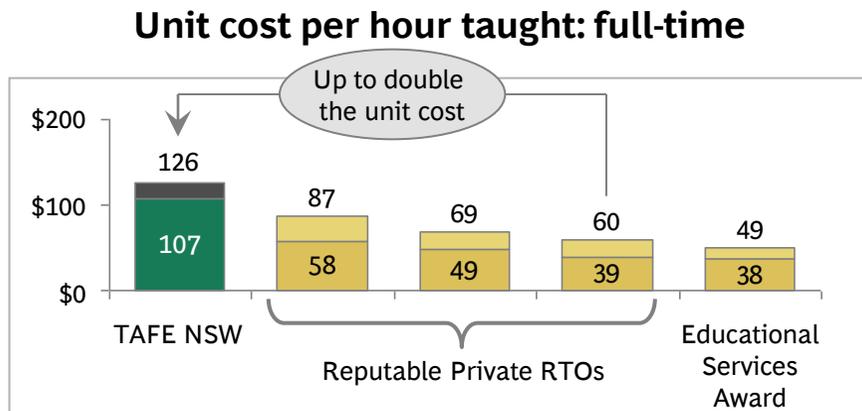
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- TAFE NSW highest rate
- TAFE NSW lowest rate
- Other TAFE highest rate
- Other TAFE lowest rate

$$\text{Annual productivity measure of teacher (cost per hour taught)} = \frac{\text{Teacher salary}}{\text{Teaching hours per year}}$$

Note: Due to different comparison time frame (March 2015, vs. July 2014) TAFE NSW costs shown here differ from those used for TAFE comparisons. Salary range extrapolated from component elements of EAs
 Source: TAFE NSW competitor analysis, as at March 2015. Based on EA terms, not actual hours.

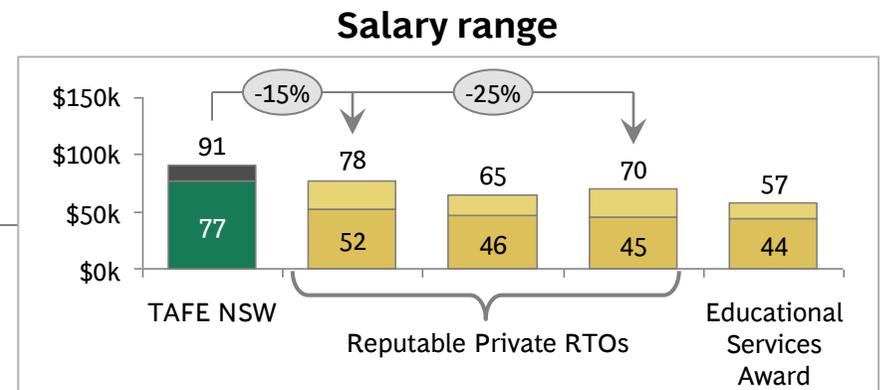
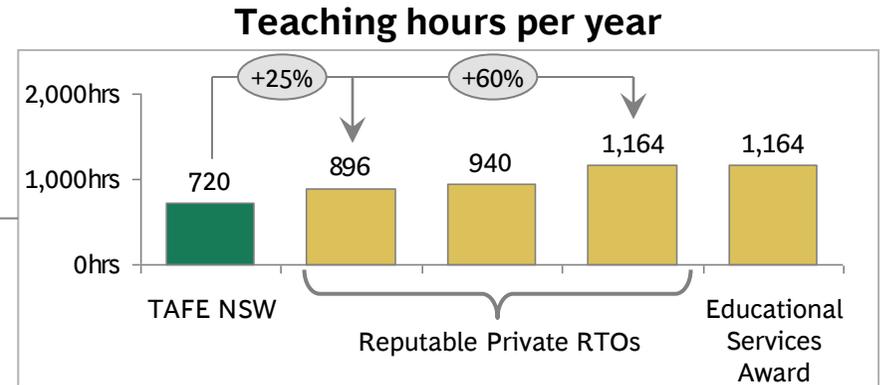
TAFE NSW teacher productivity is low: Unit costs per hour taught are up to double that some reputable private providers



Full-time teachers at competitor VET organisations teach 25-60% more hours per year

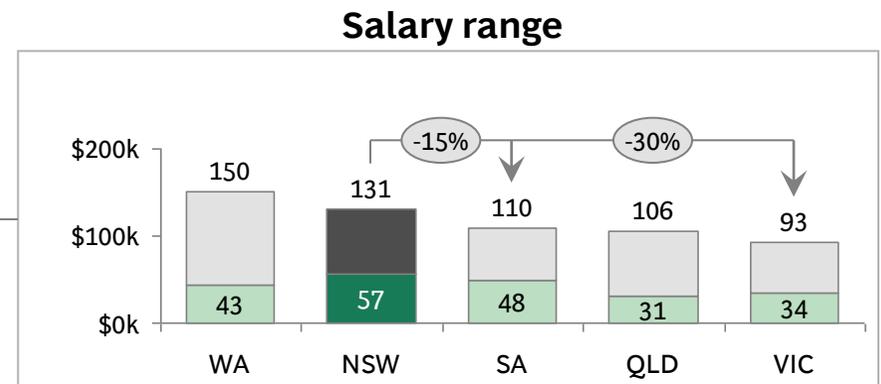
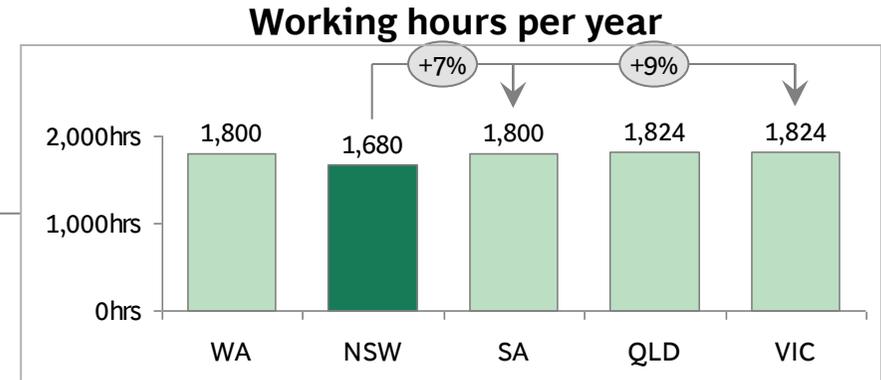
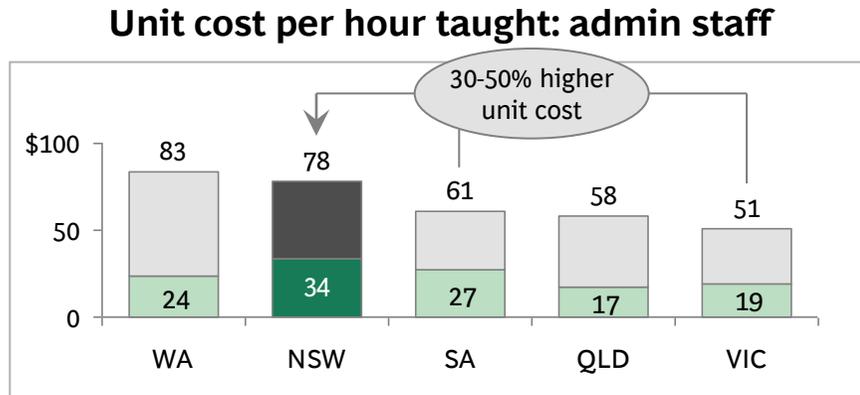
- TAFE NSW highest rate
- TAFE NSW lowest rate
- Private highest rate
- Private lowest rate

$$\text{Annual productivity measure of teacher (cost per hour taught)} = \frac{\text{Teacher salary}}{\text{Teaching hours per year}}$$



Note: Due to different comparison time frame (March 2015, vs. July 2014) TAFE NSW costs shown here differ from those used for TAFE comparisons. Salary range extrapolated from component elements of EAs
Source: TAFE NSW competitor analysis, as at March 2015. Based on EA terms, not actual hours worked.

TAFE NSW administrative productivity is low: Unit costs per hour taught are up to 50% more than other TAFEs



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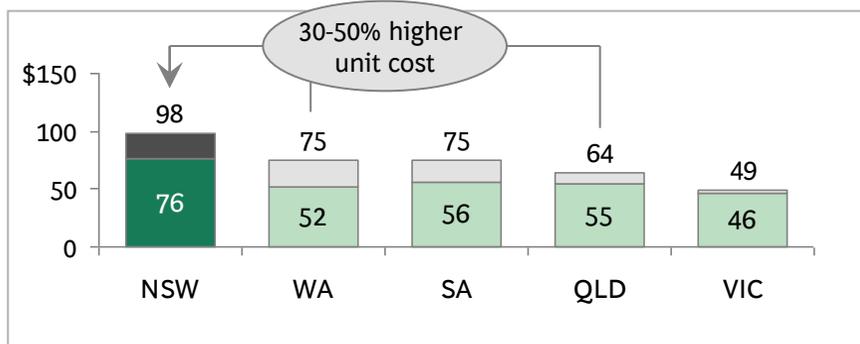
- TAFE NSW highest rate
- TAFE NSW lowest rate
- Other TAFE highest rate
- Other TAFE lowest rate

$$\text{Annual productivity measure of staff (cost per hour worked)} = \frac{\text{Staff salary}}{\text{Working hours per year}}$$

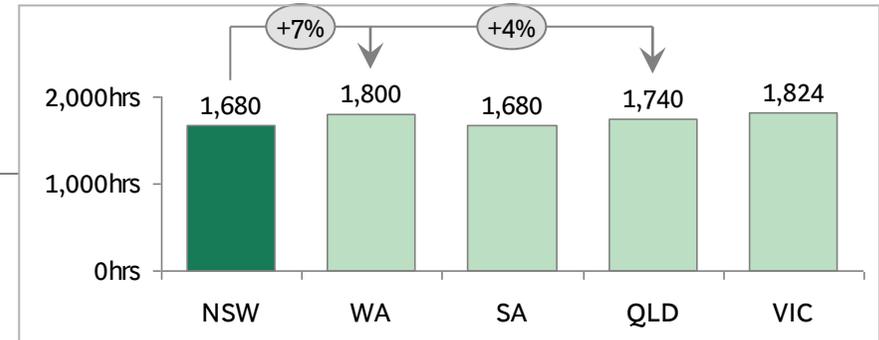
Note: When salary ranges are not directly available, these have been extrapolated from component elements of EAs
 Source: TAFE NSW competitor analysis, as at March 2015. Based on EA terms, not actual hours worked.

TAFE NSW 'educational manager' productivity is low: Unit costs per hour taught are up to 50% more than other TAFEs

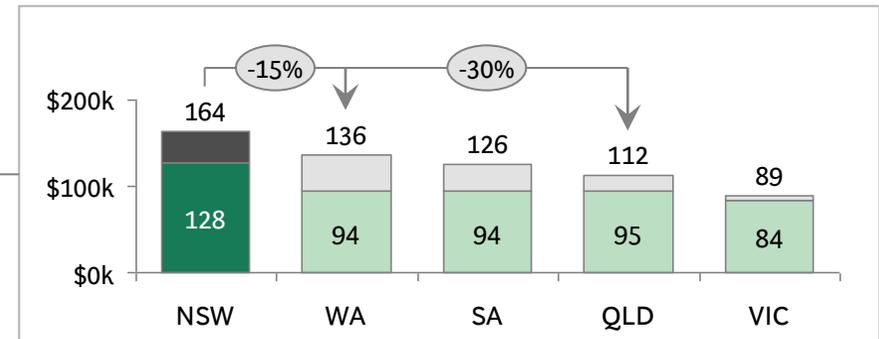
Unit cost per hour taught: educational managers



Working hours per year



Salary Range



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- TAFE NSW highest rate
- TAFE NSW lowest rate
- Other TAFE highest rate
- Other TAFE lowest rate

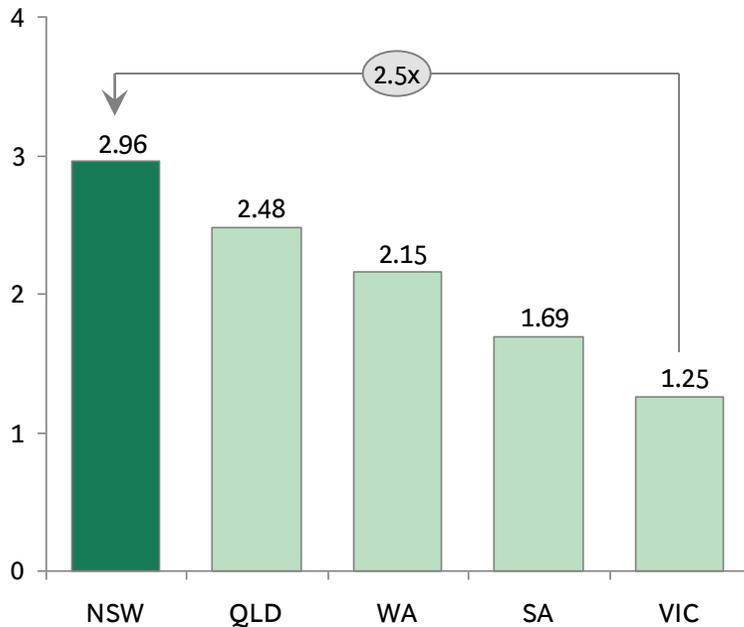
$$\text{Annual productivity measure of manager (cost per hour worked)} = \frac{\text{Manager salary}}{\text{Working hours per year}}$$

Note: When salary or wage rates are not directly available, these have been extrapolated from component elements of EAs
 Source: TAFE NSW competitor analysis, as at March 2015. Based on EA terms, not actual hours worked.

TAFE NSW's unit asset cost are high versus competitors, especially given TAFE NSW is the largest scale provider

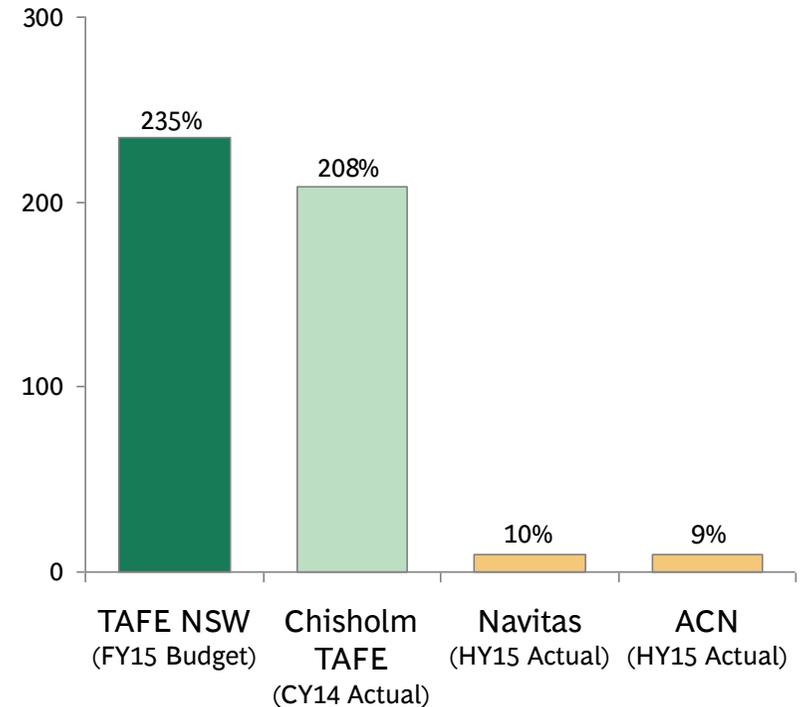
Unit cost of assets is 2.5x higher at TAFE NSW than Victorian TAFEs

Cost of assets per annual hour (\$)¹



Some RTOs have very different asset models

Value of physical assets (% revenue)

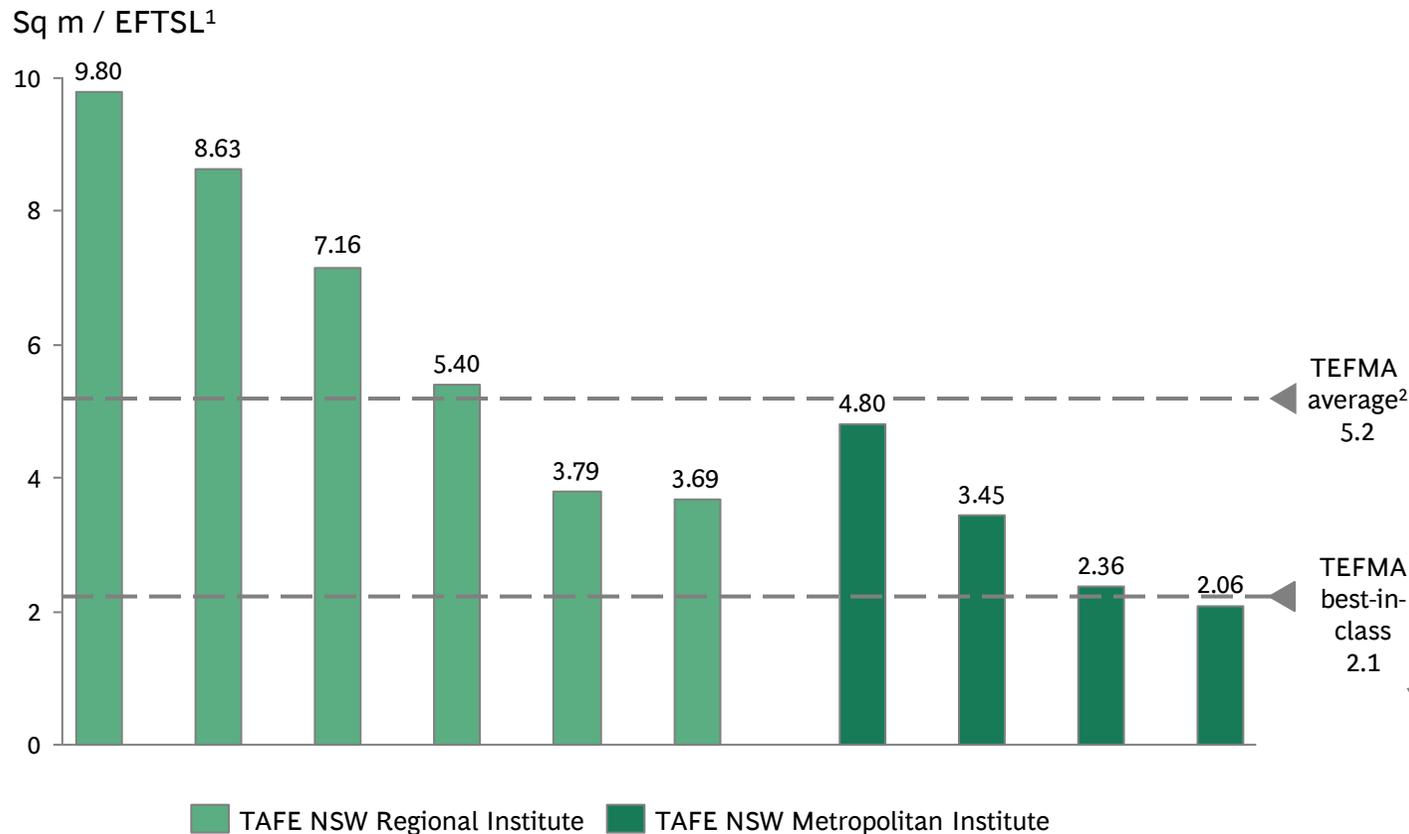


Physical Assets (\$m)	4,440	252	93	4
Revenue (\$m)	1,893	121	961	41

1. Unit cost of assets per annual hour is adjusted to reflect differing course mixes across jurisdictions.
 Note: Physical asset value is the Property, Plant and Equipment line reported in the RTO's balance sheet.
 Source: TAFE NSW FY15 Budget (revenue) and Feb 2015 Actuals (assets); Chisholm TAFE CY14 Annual Report; Navitas HY15 Financial Report; ACN Half Year Financial Report; ROGS; BCG analysis

Benchmarks show asset utilisation could be improved

Asset utilisation of TAFE NSW Institutes based on academic space (sq m) per Equivalent Full Time Student Unit (EFTSL)



TAFE NSW's assets are under-utilised, partially due to the structure of its operations and need for a large number of specialist facilities given its broad training offering

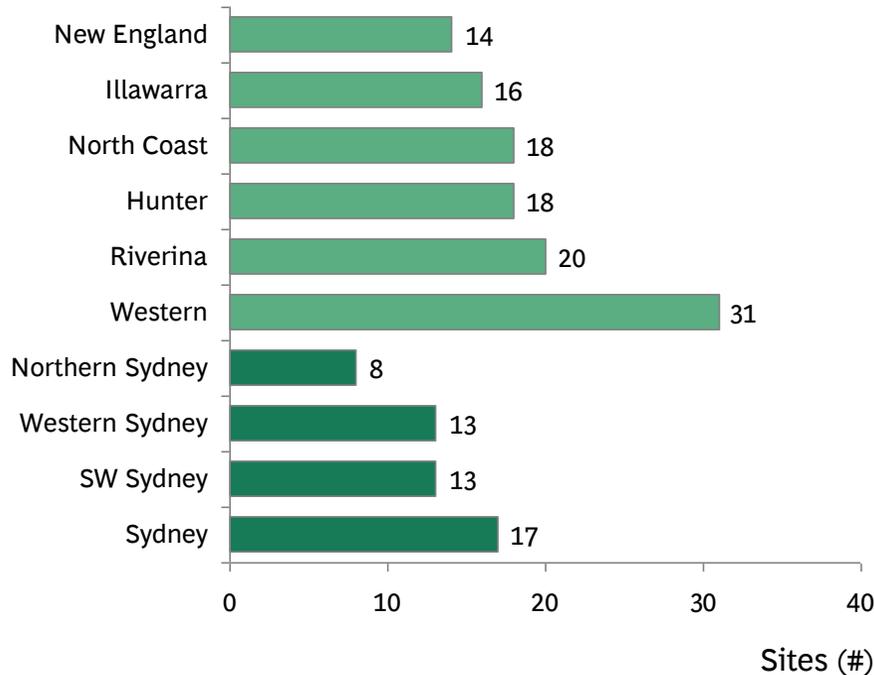
- Classes are not typically run on Fridays
- Classes are not typically offered after hours (e.g., evenings, weekends)
- Facilities are only lightly used outside of 'term'
- Most training provide on campus (vs on the job)

Tertiary Education Facilities Management Association (TEFMA) benchmarks asset utilisation across institutions. TEFMA range is 2.1-9.5

1. Academic space is based on the definition of academic space in TEFMA's Space Planning Guidelines, and accounts for ~45% of gross floor area (TEFMA average 47%). It includes dedicated teaching and research space, and academic and general support offices. EFTSL based on ASH and RPL, excluding Distance Education, Electronic Delivery, On-the-job Training and On-the-job Distance. 2. Based on 10 institutions who provided statistical data for a 2008 TEFMA survey of universities and higher education institutes
Source: NSW TAFE Asset Management System (March 2015); Savills; BCG analysis

High asset costs are driven by a large and diverse asset pool

TAFE Institutes spread across 168 sites...



...and almost 1,900 buildings



The total asset replacement value is estimated at \$4.7 billion

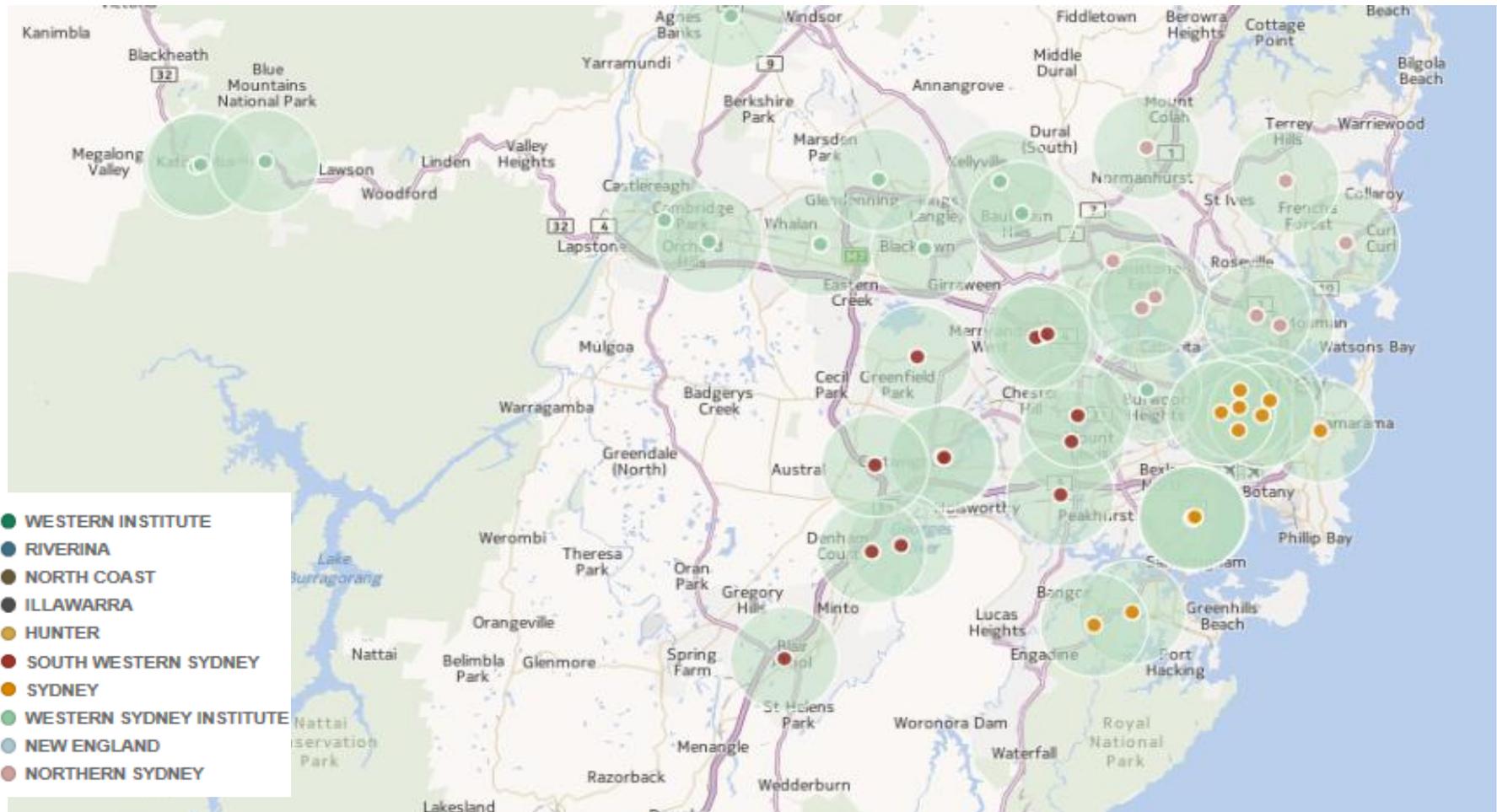
■ TAFE NSW Regional Institute
 ■ TAFE NSW Metropolitan Institute

1. Land, buildings, plant and equipment.

Source: TAFE NSW Internal data (March 2015); TAFE NSW Financial Statement (June, 2015)

Geographic spread of metropolitan TAFE institutes results in many campuses being within 5km of another campus

Metropolitan campuses within a 5km radius, by Institute



Separation of TAFE into 10 Institutes contributes to its high cost base given duplication and small scale

TAFE NSW today

Today TAFE NSW is administratively organised into ten business units called Institutes, nominally organised by geography, with each running faculty lines within it

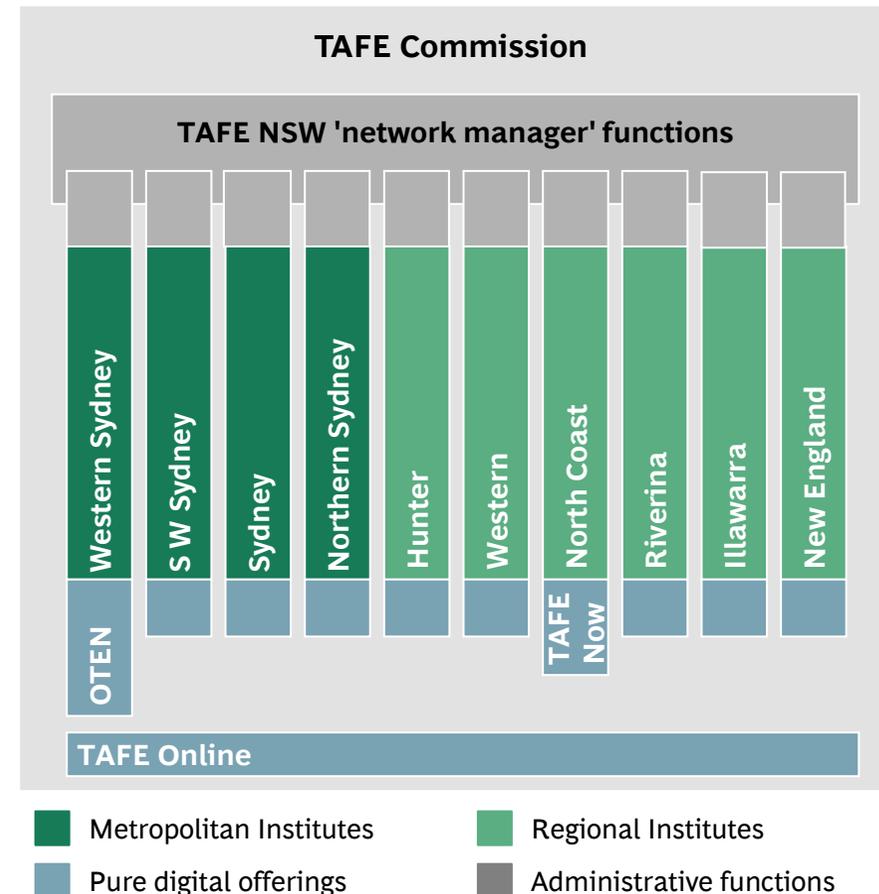
The ten Institutes are *mostly* vertically integrated along the value chain

- Within each geographic region, Institutes operates a number of campuses
- Institutes manage their own student acquisition, course delivery, and student support services and some of their course development
- Some shared functions exist including international student recruitment, some corporate services (by TAFE central support or Department of Education)
- Separate administrative functions at each Institute also drives administrative overhead and causes duplication of between Institutes and with network manager

Geographic model is a reflection of how TAFE evolved

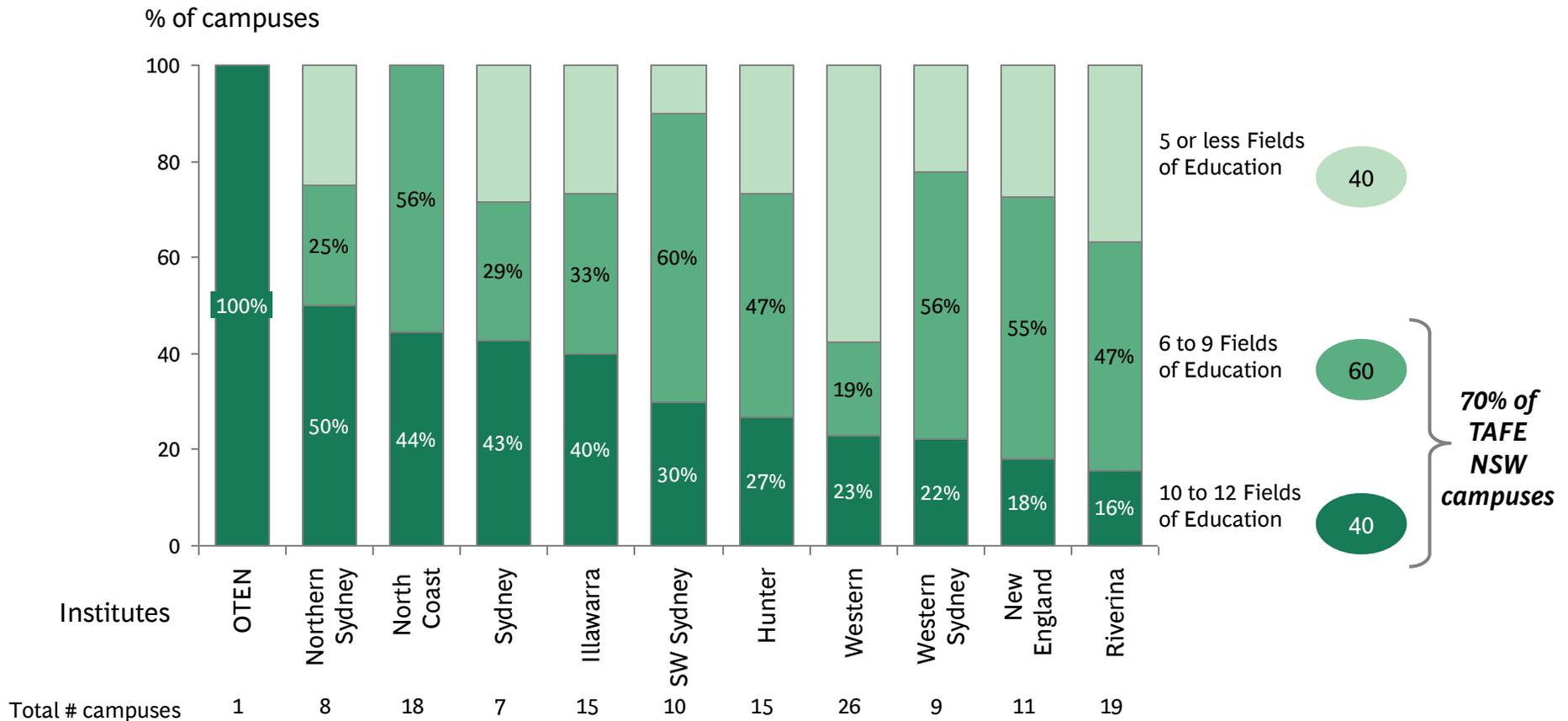
- Primary delivery mode was face-to-face on campus
- Distance was overriding factor of student choice given available technology and public transport
- Institutes tailored course offering to the economy of their local community

Illustrative diagram



Each institute provides full product offering, with 70% of campuses offering 6+ fields of education

Number of fields of education offered by Institute (CY2013)

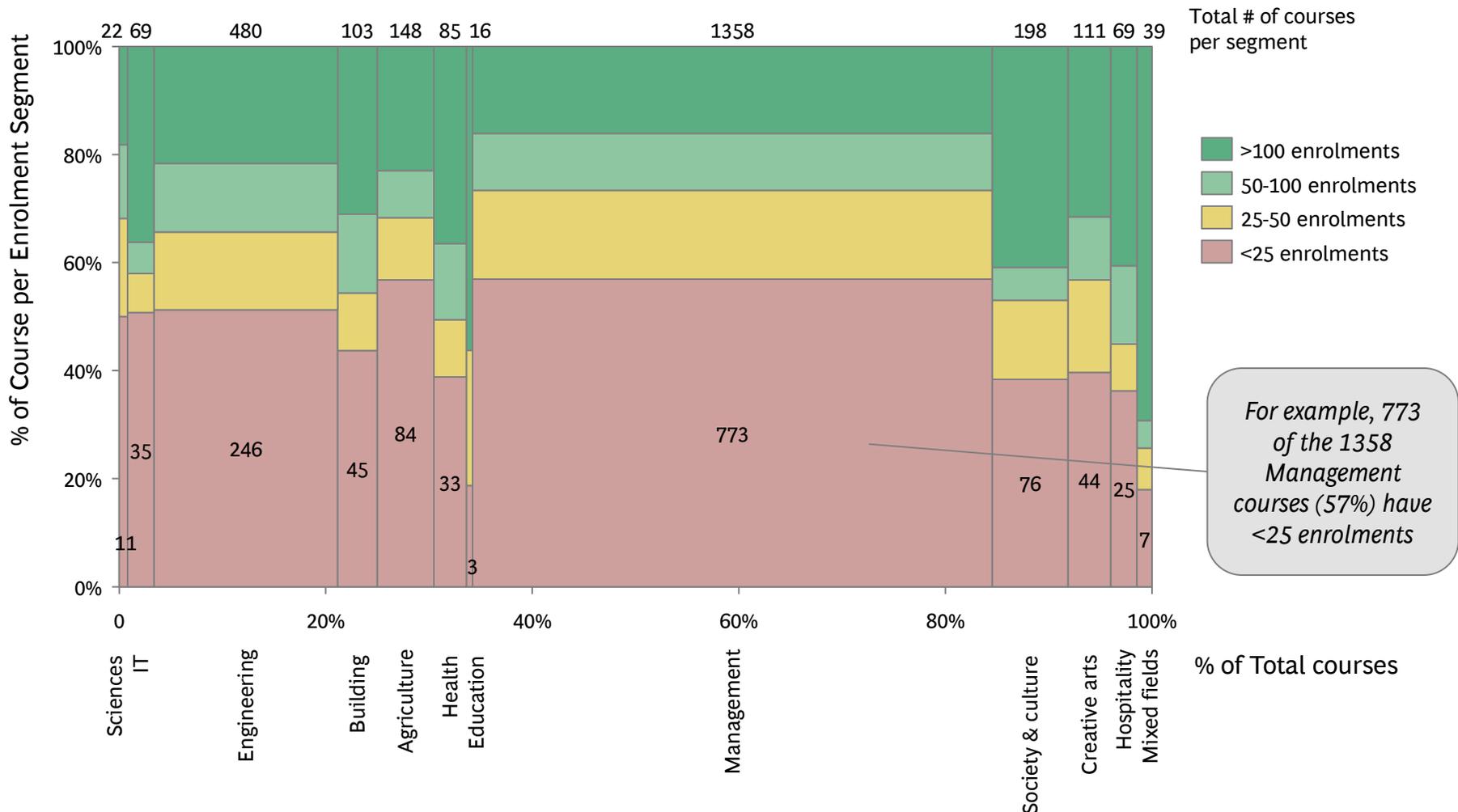


Many campuses are too small to cost-effectively deliver this breadth of training options

Source: TAFE NSW Internal data (March 2015)

TAFE NSW offers nearly 2,000 courses, with half having less than 25 enrolments

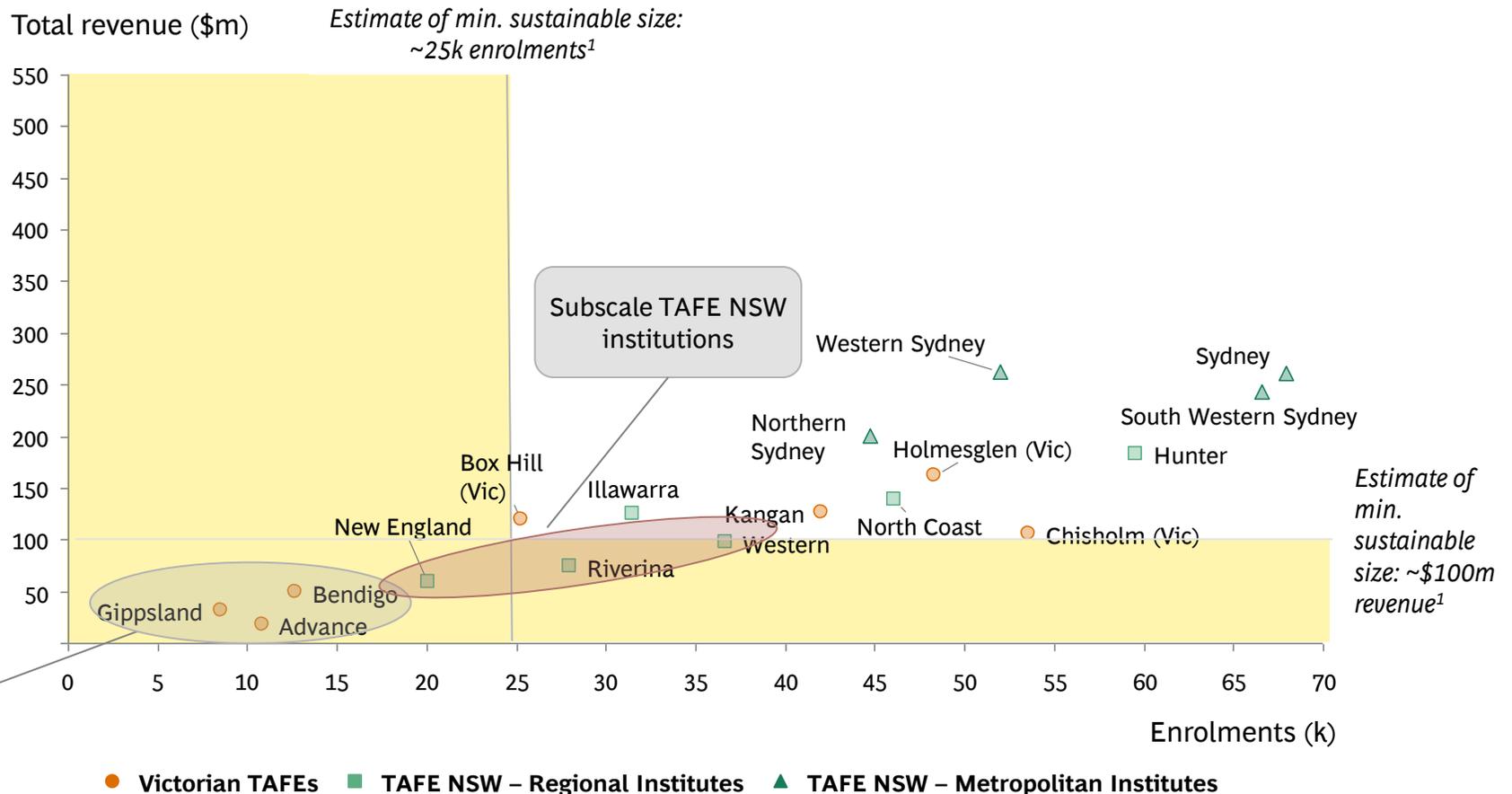
TAFE NSW courses by number of enrolments (CY2013)



Source: TAFE NSW Internal data (March 2015)

Some of TAFE NSW's smaller Institutes appear sub-scale to successfully compete

TAFE: Size of education institutions, by total revenue and enrolments (2013)



1. Minimum sustainable scale will only increase over time with a move to more blended learning, consolidation in the sector, etc. These minimums should NOT be therefore read as the level at which an institute will be sustainable. Some will not be sustainable in their market segment even though they exceed these bare minimums.

Note: Western Sydney excludes OTEN. Source: Annual reports (2013)

Some of TAFE NSW's smaller Institutes appear sub-scale to successfully compete in a contestable market

Size of education institutions, by total revenue and EFTSL (2013)

Minimum viable size

Overall, TAFE NSW is the size of a single large university by revenue and staff

- But higher enrolments/EFTSL
- Similar breadth of fields of education

Evidence suggests below ~\$100m revenue and ~10k EFTSL TAFE Institutes are unsustainable

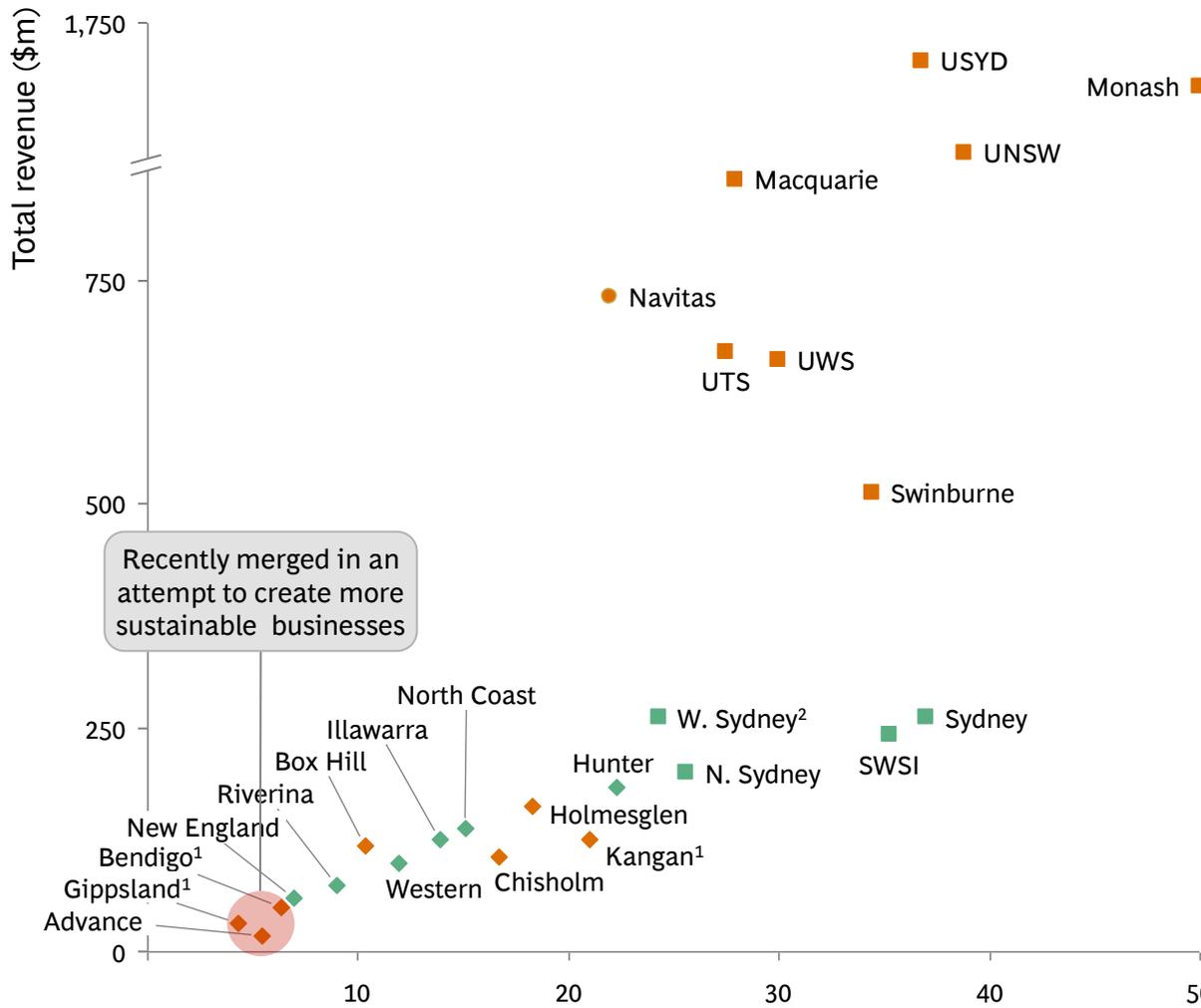
- Small, regional Institutes in Victoria recently forced to merge

Most successful broad-based VET providers are large

- >25k EFTSL if >10 fields of education

Optimal Institute size in NSW may be significantly larger

- Especially given likelihood of share loss with greater contestability



1. Assumed conversion from students to EFTSL based on NSW TAFEs and Chisholm, Holmesglen . 2. Excludes OTEN. Source: Annual reports; TAFE Reform Panel: A strong and sustainable Victorian TAFE sector (2013)

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Without change, TAFE NSW will be increasingly uncompetitive and may suffer financial losses

TAFE NSW is likely to face increased competition in the next round of the Smart and Skilled Tender, even without any changes to the Smart and Skilled approach. Following contestability in other states, TAFEs with a far stronger competitive position than TAFE NSW experienced significant competition across all product offerings, resulting in a loss of 10-20% points of market share (pg 50-52). Educational organisations, public, not-for-profit and private, are also seeking growth in NSW given changes in other markets and funding arrangements (e.g., capping VET FEE HELP, Victorian reforms, university sector dynamics).

TAFE NSW can expect especially strong competition in:

- Government and fee markets (pg 53)
- Value and price sensitive customer segments (pg 54)
- For CERT III and below qualifications from VET providers, and for higher qualifications from universities (pg 55)

To remain competitive, TAFE NSW faces a challenge of what it offers, when and where, as well as a productivity challenge.

Given its high fixed cost base, TAFE NSW needs to keep enrolments up. If, as a result of increased competition, TAFE NSW loses enrolments, it will have fewer students over which to defray its fixed costs, further weakening its ability to compete.

The current TAFE NSW model was developed for different market conditions and policy approach to VET in NSW.

Student and employer needs and preferences are changing, while online and blended delivery and increased contestability of government funding are expanding competition, requiring VET providers to be agile in responding to market demands and price their services competitively.

To compete successfully in this new market, TAFE NSW must transform into an efficient, modern, commercially astute, skills and educational service provider that delivers exceptional community and social outcomes (pg 56). This means it will need to:

- Maintain or grow market share and student numbers by improving the product offer, convenience, branding, and marketing vs. competitors.
- Transform its legacy administrative, financial and workforce management that slow its responsiveness to market shifts.
- Rapidly improve productivity to sector-competitive levels to allow it to price competitively and make targeted investments in quality.

Even though VET contestability is weaker in NSW than elsewhere, TAFE NSW still faces a major challenge

Impacts of contestability in other states have been profound

Contestability has contributed to a highly competitive and fragmented VET market in Australia

- Nearly 2,000 providers, incl. ~1,400 private RTOs
- Most private RTOs small and specialised, with <10k enrolments and 2-4 fields of study, though some larger players are emerging

Not-for-profit and private RTOs adopt a range of competitive strategies, all highly responsive to the market dynamics

- Premium specialist providers; large reputable providers and adaptive subsidy-driven providers
- Aggressively pursued growth, even where perceived high barriers to entry (e.g., engineering), and sought new enrolments (e.g., brokers, RPL, foundation)

Impact on TAFEs has been significant

- TAFEs have suffered significant share loss in contestable markets (e.g., Victoria and SA)
 - This has occurred across all fields, course levels, and metropolitan and regional areas
- This is even in the case where competitive TAFEs far more competitive than TAFE NSW have adopted similar strategies to other RTOs to compete (e.g., brokers, outsourcing) and improving productivity and reducing other costs significantly

Even though NSW contestability weaker, TAFE NSW still faces a major challenge

NSW contestability is weaker than elsewhere ...

- NSW reforms rolled out in a more controlled manner, mitigating issues seen elsewhere and allowing Institutes time to adapt
- TAFE NSW has benefit of network, scale, strong brand, and – most importantly – a strong reputation for quality teaching that could position it well for increased competition
- As late mover, NSW can learn from other states' experiences

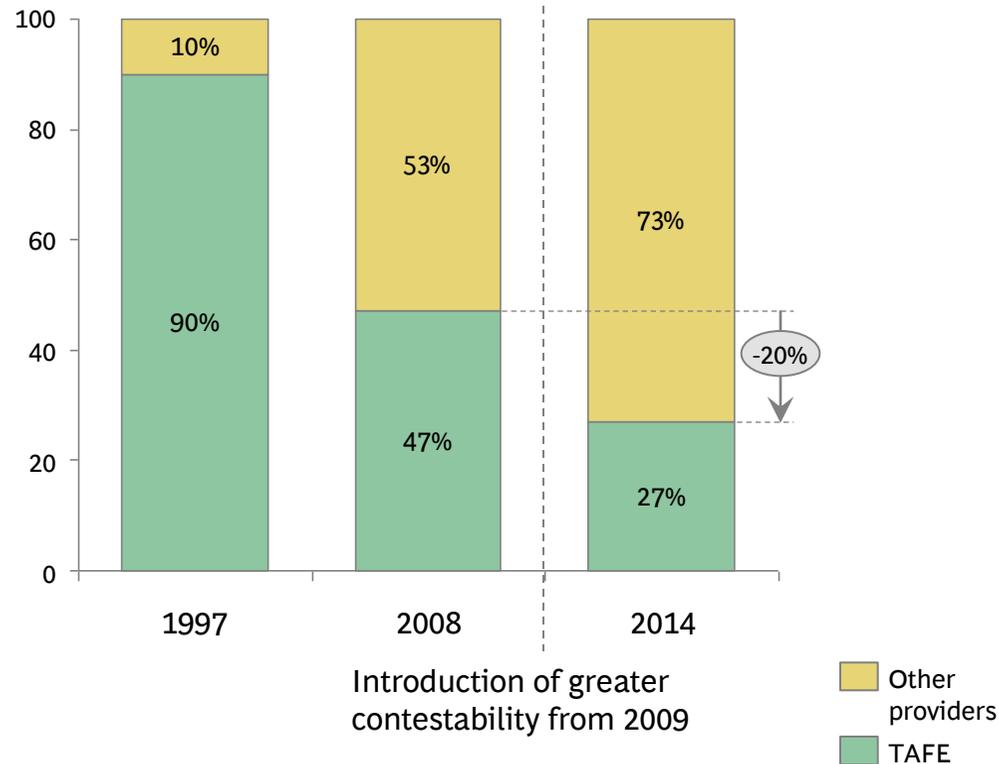
... But the challenge for TAFE NSW could be severe

- Growth seen elsewhere because of uncapped systems unlikely to occur in NSW market
- TAFE NSW is disadvantaged by
 - Less experience operating in purchaser/provider models
 - Low productivity and higher starting cost base, less commercial revenue, and lower cash reserves than other state TAFEs
 - Organisational constraints that limit its ability to operate commercially
- Not-for-profit, university and private players are now more sophisticated, given their experience and growth in other states, with a growing number of large reputable players now in the market
- Providers will compete more for traditional government funding as VET FEE HELP is capped

TAFEs in other states suffered large market share losses after the introduction of greater contestability

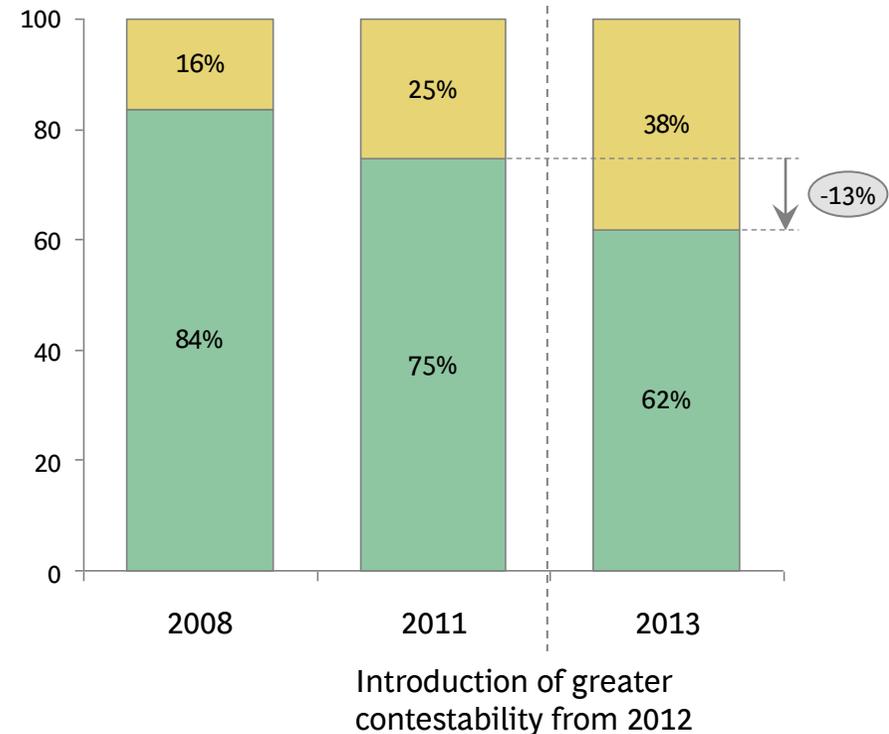
Victorian TAFEs lost ~20% pts market share after introduction of contestability

Victorian market share (% course enrolments)



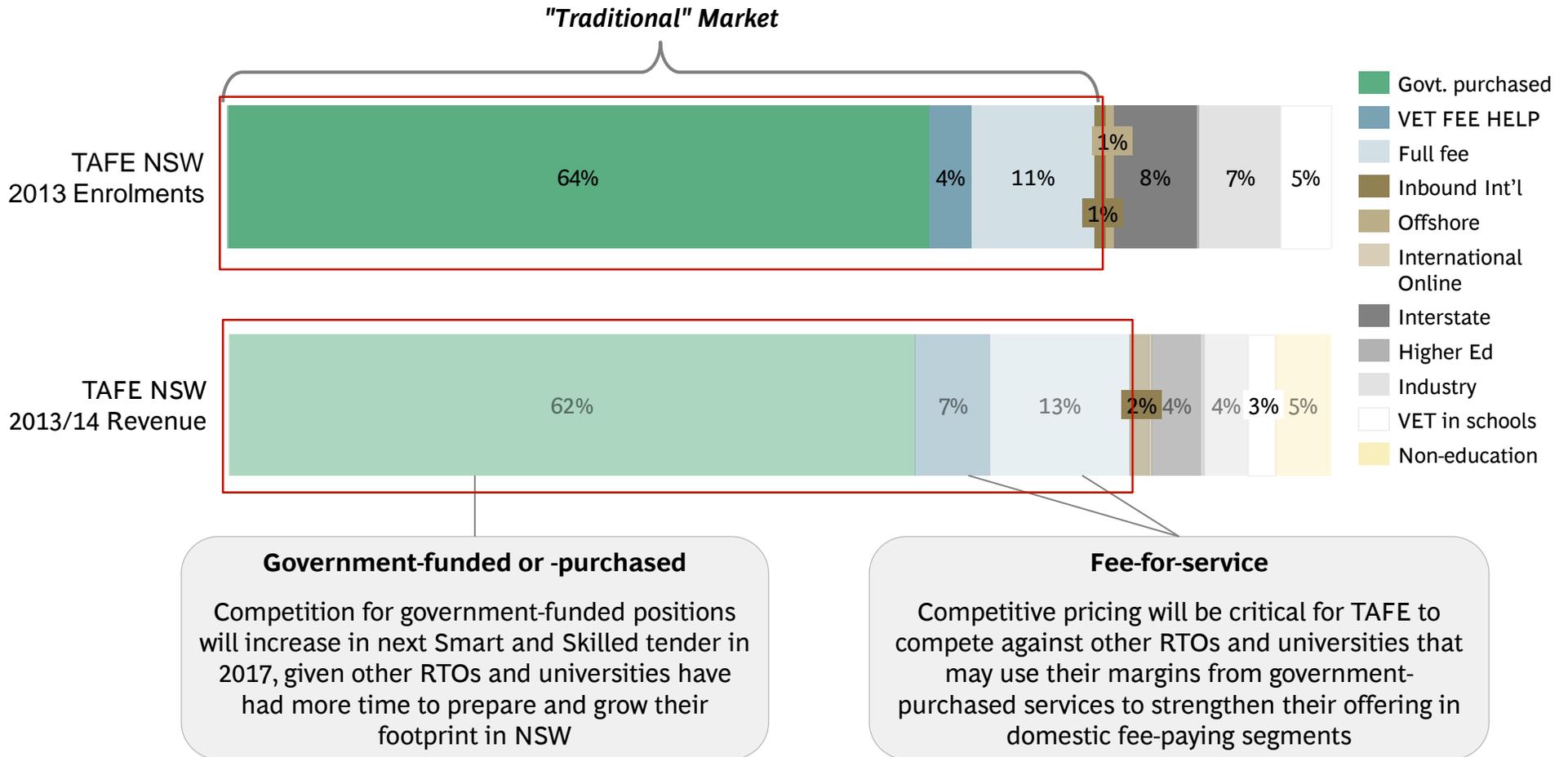
South Australian TAFEs lost 10-15% pts market share after contestability

South Australia market share (% course enrolments)



Government and fee-for-service markets are expected to become increasingly competitive

Purchasers of TAFE NSW education & training by CY 2013 enrolments and FY 2013/2014 revenue



Note: "Interstate Online" includes ~150 international online enrolments which have been assumed to be enrolments from New Zealand.
 Source: TAFE NSW enrolment and financial data; BCG analysis.

Value and Price Sensitive customer segments are expected to see the greatest competition

Customer segments

Competitive dynamics

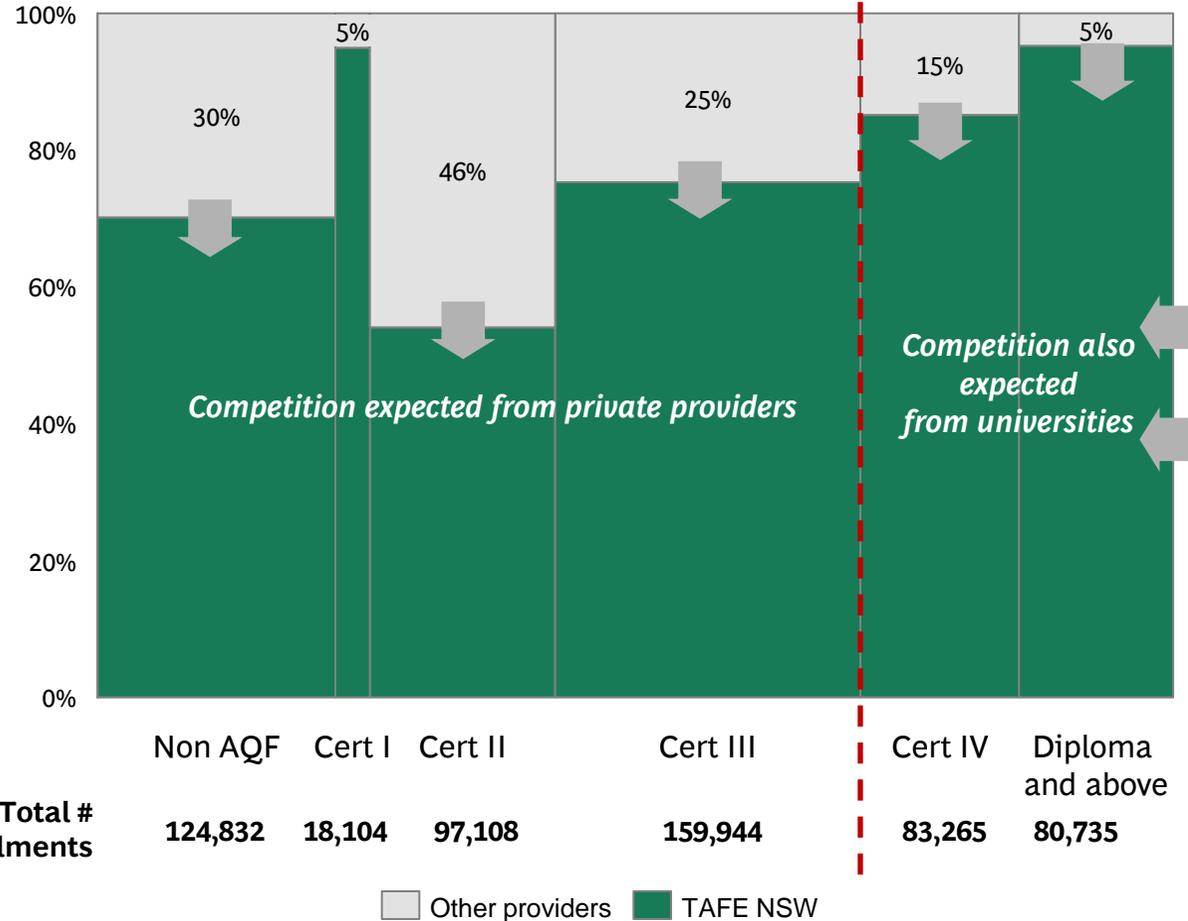
Customer segments		Competitive dynamics
Premium <i>Niche education seekers, with a focus on quality</i>	TAFE NSW enrolments 5–10% <ul style="list-style-type: none"> Quality of education and expertise/reputation of provider are primary decision factors Price and convenience less important – willing to pay a quality premium 	High-quality providers focused on a subset of courses with price premiums based on strong brands and reputations, resulting in higher margins
Value <i>Quality seekers, with an eye on value</i>	40–50% <ul style="list-style-type: none"> Concerned about quality of education/provider reputation Value-conscious: price is still a decision factor Convenience (e.g., location and scheduling) are important 	Large reputable providers who leverage scale to offer value. More providers, especially private, are moving into this space
Price-sensitive <i>Seek low-cost qualification</i>	25-35% <ul style="list-style-type: none"> Primary concern is obtaining a qualification, rather than necessarily the quality of that qualification Price is very important and willing to trade quality for it Convenience is a key driver of choice 	Highly "adaptive" providers, serving bottom two segments in innovative ways, with significant resources applied to attracting potential students (e.g., brokers)
Agnostic <i>Highly susceptible to "push factors"</i>	15–20% <ul style="list-style-type: none"> Agnostic to quality/price concerns or have limited agency Highly susceptible to aggressive recruitment strategies External organisations (Centrelink, migration agents) are primary decision maker/influencer on customer choice 	While some quality providers (e.g., not-for-profit providers), other unreputable players target parts of this market. Stronger regulatory approaches likely to be applied

Providers are defining their competitive advantage by identifying and tailoring their offerings to specific customer segments

TAFE NSW is likely to face heavy competition across the board

TAFE NSW share of NSW VET market by Certificate Category (2013)

% market share within CERT category



CERT III and below:

- TAFE NSW's market share in lower level qualifications (CERT III and below) is expected to face strong competition in the next Smart and Skilled tender for Cert I to III that are currently contestable

CERT IV and above:

- TAFE NSW will also face competition from reputable private providers in high qualifications given their commercial attractiveness
- Universities starting to compete with higher and Diploma courses, especially given university deregulation and strong brands

To succeed in a changing marketplace, substantial performance improvement is required

TAFE NSW seeks to be the VET provider of choice for students and employers, delivering real value to the NSW economy and society, and operating successfully as a competitive, financially sustainable, government-owned education business. To achieve this vision and succeed in a changing marketplace, substantial performance improvement will be required.

Without change, TAFE NSW will be increasingly uncompetitive and may suffer financial losses. To remain competitive, TAFE NSW will need to:

- Maintain or grow market share and student numbers by improving the product offer, convenience, branding, and marketing vs. competitors. This may include enhancing online and blended delivery which both better meets student and employer customer demands and can increase overall productivity of delivery¹
- Transform its legacy administrative, financial and workforce management that slow its responsiveness to market shifts. This may include reducing duplication of effort in the online space between OTEN and individual Institute online presences; minimising customer confusion from the proliferation of TAFE NSW brands; addressing sub-scale institutions spread across geographies and fields of education; and reducing administrative duplication between Institutes, and between Institutes and the 'centre' of TAFE NSW.
- Rapidly improve productivity and competitive cost position to sector-competitive levels to allow it to price to win business and make targeted investments in quality. This may include improving workforce productivity and total unit cost and improving the productivity of TAFE NSW's physical asset base, potentially widening geographic reach while reducing the absolute asset size in each location served.

Without change, TAFE NSW could see market share decreases (and therefore job losses) similar to those experienced by other state TAFEs following increased contestability. While overall there is enormous market potential for vocational education and training in Australia, TAFE NSW will need to reform from its current historic model to an efficient, modern, commercially astute, skills and educational service provider that delivers exceptional community and social outcomes, for it to take advantage of this great potential.

1. TAFE NSW OTEN's cost of delivery (teaching, management of teaching and other delivery support, excluding property, plant and equipment, executive management support, student support services, and shared corporate services) is ~65% lower than TAFE NSW average. Example international studies of universities show ~35% cost reduction by increasing online delivery as part of blended offers, e.g. 1999 to 2003 study of 30 courses at US universities that redesigned select courses to leverage technology (see <http://www.thencat.org/PCR.htm>)

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Fields of Education

Examples of courses offered by TAFE NSW

Education	Training and Assessment, Education Support, Assessor Skill Kit
Sciences	Lab technology / Skills, Pathology, Wine Industry Operations
Health	Dental, Mental Health, Hearing, Nursing, VET, Massage, Optical
Arts	Fine Arts, Design, Digital Media, Floristry, Music, Fashion, Photography
Agriculture	Agriculture, Horticulture, Conservations, Forestry, Shearing, Gardening
Hospitality	Meat / Food Processing, Cooking, Beauty Services, Hairdressing
IT	IT Support, Programming, Websites, Games, Technology
Building	Building, Construction, Surveying, Carpentry, Plumbing, Painting
Engineering	Transport, Electro Technology, Auto, Cabinet Making, Electrical Eng.
Society & Culture	Languages, ESL, Care (Aged, Child, Disability, Youth), Community
Mixed Field	Communication Skills, Literacy and Numeracy, Skills for Work
Management	Business Admin, HR, Advertising, Finance, Accounting, Retail Management

Definitions of alternative digital education models

Definition of Course Type

Online

- All courses entirely taught via the internet, including
 - Facilitated online classrooms with teacher providing tuition via webcam in real-time
 - Learning with no live teaching (eg. pre-recorded lectures, e-labs, interactive PDFs)
- Courses taught predominantly via the internet but with
 - A work-experience component
 - A nominal "in-classroom" component

Blended

- All other courses with
 - Some course units taught via the internet in the same fashion as online courses, and
 - Some course units that are taught face-to-face (in a classroom, simulated workplace, or on-site), or which are themselves blended units

Technology-assisted

- All courses, or any units, which
 - Are not pure online or blended, but which
 - Incorporate technology to aid teachers in delivering content face-to-face in a classroom, simulated workplace, or on-site (e.g. electronic whiteboards) or to aid students in learning (use of iPads in class)

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