



Cambridge
Assessment



Annual
Review

16–17

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Key facts

In 2016–17 the Cambridge Assessment Group:

Designed and delivered assessments to more than eight million learners in



over
170 countries

Advised and assisted



over
23,000

educational institutions and organisations

Received more than

50
million

visits to its websites



Handled and processed



80
million

examination items

Employed

over
2,500 staff in



40
locations around
the world

Trained and developed



around
200,000 teachers

Generated revenue of



over
£413
million



2

The Group

The Corporate Board

Group Chief Executive: Simon Lebus

Exam board Chief Executives:

- Saul Nassé, Cambridge Assessment English
- Michael O'Sullivan CMG, Cambridge Assessment International Education
- Leo Shapiro, Oxford, Cambridge and RSA

Corporate Services Division:

- Liz Allan, Group Director, Human Resources
- Bruno Laquet, Group Director, Infrastructure Services
- Tim Oates CBE, Group Director, Assessment Research and Development
- Jackie Rippeth, Group Director, Finance



We provide world-class qualifications and education programmes that give learners the confidence to demonstrate and fulfil their potential. A department of the University of Cambridge, we have the longest continuous history of any UK exam board and are the only one still wholly owned by a university.

We operate and manage three exam boards:

 **Cambridge Assessment English**

Cambridge Assessment English provides the world's leading range of qualifications for learners and teachers of English. Its mission is to help people learn English and prove their skills to the world.

Cambridge Assessment English works in more than 130 countries. Over five million people every year take its exams, which are recognised by over 20,000 universities, employers and governments.

 **Cambridge Assessment International Education**

Cambridge Assessment International Education prepares school students for life, helping them develop an informed curiosity and a lasting passion for learning. Its Cambridge Pathway gives students a clear path for educational success from ages five to 19.

More than 10,000 schools in 160 countries are part of the Cambridge learning community and Cambridge Assessment International Education is a trusted partner for governments in over 30 countries.

OCR
Oxford Cambridge and RSA

Oxford, Cambridge and Royal Society of Arts (OCR) is one of the UK's leading exam boards, providing a wide range of general and vocational qualifications to equip learners aged 14 to 19 and beyond with the knowledge and skills they need to achieve their full potential.

Each year, students achieve more than three million OCR qualifications at 8,000 centres including schools, sixth form and further education colleges and training providers.

Global growth

It has been a busy year for the Group, as snapshots from just one month show: in May 2017 strategic cooperation memoranda were signed with three education groups in China; one of Vietnam's most esteemed state schools became the first state school in the entire country to offer Cambridge International A Levels; Romania hosted the first forum for Cambridge International principals in Central and Eastern Europe; and Paraguay's Ministry of Education recognised Cambridge Assessment English exams.

Cambridge Assessment has more than trebled in size since 2002 and in the year covered by this report – August 2016 to July 2017 – we generated revenue of over £413 million, up by more than five per cent on last year.

Powerful global social and economic drivers are creating opportunities for the Group's worldwide success and underpin our prospects for sustainable growth. They include a huge growth in demand for international education fuelled by globalisation, the continuing spread of digital and the steadily increasing use of English in every part of the world (an estimated 1.5 billion people are currently learning English). Both public and private education systems increasingly see the need to align their teaching and assessment to global standards, without sacrificing their distinctive national perspectives and values.

A highly competitive world makes almost all educational assessment high-stakes, with personal progression depending on it and the data generated from it being used to shape and

manage school systems. Well-designed external assessment such as the Group offers sets reliable benchmarks and enhances accountability. It provides reassurance for parents, for employers, for governments.

Meanwhile, the desire to learn by looking beyond our own society is stronger than ever, with millions of young people around the globe striving to maximise their potential through education with international characteristics. The number of students travelling overseas for their education almost doubled to 3.7 million between 2000 and 2009 and is likely to rise to seven million by 2020. The global market for English-medium pathway programmes is already worth \$1.4 billion.

Mobility in higher education depends on globally recognised qualifications. Cambridge learners can be confident that their qualifications will be valued in their home country and internationally; a survey published in September 2016 found that 98 per cent of admissions officers at prestigious higher education institutions including Ivy League and Russell Group members thought the Group's international school-leaving qualifications gave students an excellent preparation for university, and helped them succeed there.

Meanwhile, recognition has continued to grow for Cambridge Assessment English. More than 20,000 organisations around the world rely on Cambridge English Qualifications as proof of English language ability. This includes recognition from 99 of the Top 100 universities listed by the UK's Times Higher Education magazine.

Case study

Florida's public school boards

The United States is one of Cambridge Assessment International Education's fastest growing areas, with over 500 universities accepting its International AS & A Levels. It has developed a strong presence in Florida and the board's qualifications are now fully recognised by the state's universities, and students with Cambridge International qualifications have equal access to scholarships. Palm Beach County enters more students for Cambridge International AS & A Levels than for the equivalent American qualifications. Miami-Dade, the fourth largest school district in the entire USA, has 68 schools offering Cambridge International programmes at every level from elementary to high school.

"Cambridge courses demand that students own the lessons, rather than just experiencing them," says Geoff McKee, Instructional Superintendent at Palm Beach County School District. "Grappling with the integration of concepts, applying lessons to real and hypothetical situations and communicating original insights are part of the learning process for Cambridge courses. Students who engage in such rigorous learning activities experience impressive gains in standardized test performance. But they also thrive beyond the classroom as a result of the analytical, research, communication, and problem-solving skills they develop through engaging in the Cambridge curriculum."

Educators also find Cambridge International is for all students, regardless of background. Deborah Gonzalez, Chief Academic Officer at ASU Preparatory Academies says: "We believe we have a fundamental responsibility to ensure every student is prepared to graduate from college regardless of their zip code, home language, or family income. We found a great educational partner with Cambridge International. Providing Cambridge programmes for every learner helped us move a low-performing school to an A school with graduation rates of 100 per cent and post-secondary admission rates of 100 per cent for our first two graduating classes."



Delivering qualifications

Globally, more schools than ever are choosing Cambridge Assessment International Education to educate and assess students at every stage of the curriculum. Cambridge International AS & A Level entries rose by 10 per cent in June 2017, while Cambridge IGCSE continues to be the world's most popular international curriculum for 14–16-year-olds, with entries increasing by seven per cent internationally.

Cambridge Assessment International Education is the world's largest provider of international education programmes and qualifications for five to 19-year-olds. Its qualifications and programmes create a platform on which schools can develop their own curriculum that suits their context, culture and ethos, and that they can tailor to their students' needs.

Currently tailored to 14–19-year-olds, Global Perspectives is Cambridge Assessment International Education's fastest growing subject. Entries have expanded by over 50 per cent since 2014 and grew by 35 per cent in 2016–17 alone, propelled by enthusiasm for the course's innovative approach to 21st century skills.

Global Perspectives enables students to join up with schools in other parts of the world.



Case study: Sri Lanka's Gateway Group of International Schools

The earlier students begin to acquire and practise higher-order thinking skills, the greater the impact on their learning, so now Cambridge International is adapting the Global Perspectives programme for students aged five to 14. A two-year pilot with more than 40 schools is nearing completion and the courses will be ready for first teaching from June 2018.

"This programme is very interesting, even for the teachers, because it's all skills oriented," says Nirmali Wickremesinghe, Consultant to the Gateway Group of International Schools in Sri Lanka, which is taking part in the pilot. "The programme concentrates on six skills, delivered through Challenges, which are necessary for life: reflection, communication, collaboration, evaluation, research and analysis." The group of four schools did not previously offer Global Perspectives at all, but do so now as part of the pilot. "We are connected to other schools too," says Nirmali. "We find Global Perspectives is a wonderful way of incorporating skills that are so important to the learning process. It's very effective and I think that's how all subjects should be taught: children are taking responsibility for their learning and they are sharpening their learning skills."

“It is the most widely used test of *English for migration to English-speaking countries* and is recognised by more than 10,000 universities, schools, employers and immigration bodies...”



The course places academic studies in a real-world context and transcends disciplinary boundaries. Students learn to think critically by studying a range of issues and multiple points of view. A dedicated online learning platform (free of charge to participating schools) enables them to join up with students in other parts of the world working on similar projects, so São Paulo can compare notes and exchange data with Singapore. Students and teachers also have access to an exclusive web-based learning area that supports collaborative working and reflection.

English for migration and higher education

At the end of summer 2017 Cambridge Assessment English marked a milestone with the announcement that three million International English Language Testing System (IELTS) tests had been taken in the past year. IELTS, which Cambridge Assessment English jointly owns with the British Council and IDP: IELTS Australia, was established in 1989 and has become a household name around the world. It is the most widely used test of English for migration to English-speaking countries and is recognised by more than 10,000 universities, schools, employers and

immigration bodies, including all universities in Australia and the UK and many of the leading institutions in the USA.

Collaborations in the world of English language learning are continuing to bear fruit. Cambridge Exams Publishing, a joint initiative between Cambridge Assessment English and Cambridge University Press that develops official preparation materials for Cambridge English Qualifications, continues to enjoy success, as does the Occupational English Test (OET), a joint venture between Cambridge Assessment English and Australia’s Box Hill Institute that produces a well-respected international English language test for the healthcare sector. The test has just been formally recognised for overseas-trained nurses and midwives who need to prove their level of English proficiency to work in the UK.

Meanwhile, a new test that is simplifying English language testing for organisations is proving popular around the world. Linguaskill, a new on-demand and easy-to-set-up English language test is already being used in different sectors in Guatemala, Mexico, Poland, Russia, Saudi Arabia, Spain, Switzerland, Thailand, the United Arab Emirates and by the global education chain Laureate.

“2017 saw the launch by OCR of ‘ExamBuilder’, a free online mock exam service to support UK students taking GCSE and A Level Sciences, Maths, Computer Science and Physical Education qualifications.”

Reforming curricula, expanding choices

More than 30 reformed qualifications were introduced into UK classrooms in September 2017. New Maths, English Language and English Literature GCSEs, with a new 9 to 1 grading system, were taken for the first time in summer 2017, with new GCSEs in a further 16 subjects being taught in preparation for the first exams in June 2018. Our UK exam board OCR had already launched over 70 new AS & A Levels and GCSEs in 2015 and 2016.

In what is often described as the biggest shake-up for a generation, five years of intensive study, thought and design have seen OCR revise its entire suite of GCSEs and AS & A Levels. The reforms take account of improved understanding of individual subjects, of lessons learned in teaching practice, and of the Group’s own targeted research.

Although OCR already offers a broad range of subjects, qualification reform has given it the opportunity to expand choice, with contemporary options for students while also helping teachers find subjects they can teach with passion. Key developments in 2016/17 included:

- OCR becoming the only board to provide a choice of two new suites in maths, the UK’s most popular subject at A Level. These include mechanics and statistics – including using large data sets – for the first time.
- OCR becoming the only board offering AS & A Level options in Design Engineering, Fashion and Textiles and Product Design under the Design and Technology umbrella.
- One in three OCR schools and colleges teaching at least one of its new History A Level topics. ‘Popular Culture and the Witchcraze of the 16th and 17th Centuries’ proved the most popular topic (followed by ‘The American Revolution 1740–1796’ and ‘The Middle East 1908–2011’). Other new themes available at A Level include ‘Genghis Khan and the Explosion from the Steppes c.1167–1405’ and ‘African Kingdoms c.1400–c.1800’.
- OCR’s vocational qualifications for 14–19-year-olds now providing a highly popular alternative in a sector where

choice has been limited. Cambridge Technicals are OCR’s fastest growing vocational suite, with entries up 25 per cent this year. The new Level 3 qualifications let students take units specific to areas within the industry they want to work in, and prepare them to progress to further study or straight into the workplace. Options include digital media, engineering, health and social care, laboratory skills, and sport and physical activity.

Introducing ‘ExamBuilder’

2017 saw the launch by OCR of ‘ExamBuilder’, a free online mock exam service to support UK students taking GCSE and A Level Sciences, Maths, Computer Science and Physical Education qualifications. Created in collaboration with teachers and the Hodder Education publishing group, it enables users to create their own unique mock exam papers by selecting questions from a vast Cambridge archive – or ‘item bank’ – together with relevant mark schemes.

The service is a good example of how digital resources can make life easier for teachers, and more than 2,000 schools have signed up since the launch at the major education technology event BETT 2017. A Head of Chemistry at one school reported that ExamBuilder “mixes ease of use with rich functionality that will save any teacher a load of time”.



OCR’s new ExamBuilder service was launched at the education technology event BETT.



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Serving schools, developing teachers

Lessons are being taught or prepared somewhere on earth at almost every moment, and school administrators often confront demanding issues. Cambridge's support services address those issues in a considerate and timely way. To take one example, OCR fulfilled over 1,200 orders for modified, tactile or Braille exam papers in 2017.



Supporting customers

An international education operation has to cater for Azerbaijan and Auckland, Buenos Aires and Beijing. Being responsive involved expanding Cambridge Assessment International Education's and Cambridge Assessment English's provision of customer services to 24 hours, six days a week from November 2016. This was made possible by opening a new support centre in the Philippines' capital, Manila, which the two exam boards share with colleagues from the wider Group.

In the first eight months, Cambridge International advisers alone handled 53,989 calls and 142,000 emails.

Helping teachers teach

Teacher development is often considered as one of the most important paths to improving educational outcomes. Cambridge Assessment trained around 200,000 teachers and other educational professionals in 2016–17, and more of them than ever before are now taking our professional development qualifications in areas such as digital technologies, bilingual learning and educational leadership.

The Group is also committed to equipping teachers to be professional trainers who can go on to develop other teachers in their region. Alka Pandey, Vice-Principal of Pune's Daffodil International School, India, had this to say of a recent course run by our international exam board: "The two-day selection event to become a Cambridge trainer was one of the most



Michael O'Sullivan CMG, Chief Executive of Cambridge Assessment International Education (left), Marshall Schott of the Sampoerna Academy (centre) and Gusman Yahya of Putera Sampoerna Foundation.

enriching events I have attended professionally. The hardest part was showcasing our staff development skills in front of the expert observers. But the most positive thing was the inclusive and supportive environment. We were made to feel completely at ease."

A ground-breaking alliance between Cambridge Assessment International Education and the Putera Sampoerna Foundation provides an excellent model of how to build local capacity for the delivery of professional development in education. The Foundation promotes a better quality of education for Indonesia's 260 million people and a Memorandum of Understanding signed in February 2017 will enable Cambridge International and Sampoerna to develop Indonesian teachers to teach an international curriculum in English, as well as giving them the opportunity to become Cambridge-accredited teacher trainers themselves. Two hundred schools in Indonesia offer Cambridge programmes, often in combination with the national curriculum.

Gusman Yahya, Head of its School Development Outreach, said: "We actively engage with highly reputable international education institutions to continuously produce quality graduates able to compete in the world market. The partnership with Cambridge International will create bigger opportunities, in terms of access and affordability, for schools and educators to have high-quality professional development."

March 2017 saw more than 200 educators from almost 180 schools in Pakistan attend a conference in Karachi on the theme of 'Reflective Learning', hosted by Cambridge Assessment International Education. The Pakistan Schools Conference

“Teacher development is often considered as one of the *most important paths* to improving educational outcomes. Cambridge Assessment trained around 200,000 educational professionals in 2016–17, and *more of them than ever before* are now taking our qualifications.”

has become an annual event helping Cambridge International schools share knowledge and ideas. Principals discussed how to facilitate, manage and evaluate reflective practice among students and teachers, as well as how to encourage an open and honest school culture where mistakes are viewed as opportunities to learn.

A principal who attended said: "We not only learnt immensely from the keynote speakers, but from our colleagues too. Cambridge International is striving to be an education system which does not prize test scores as the ultimate goal, but wants its teachers and learners to have a strong virtue of reflection as well."

A valuable resource

Formative (or classroom) assessment varies significantly from school to school in every country. Cambridge supports the development of a systematic approach, with teachers using questions, not just to prepare pupils to pass tests, but in order to add a rich layer of learning to every school day.

This is where the Group's 'item bank' comes in; we are able to draw on 160 years' worth of exam questions, many of which are remarkably relevant today. The Group also continues to work with computer giant Microsoft, Durham University and technology partner Diagnostic Questions on 'Project Quantum' to crowd source questions from schools around the globe.

In addition, the Group continued on a collaborative project with our colleagues at the University's Cavendish Laboratory and Physics department in which a selection of demanding historic physics questions are made available online for teachers and students from GCSE level through to university. The Isaac Physics project (isaacphysics.org) which uses just a small part of the Group's item bank, averages 55,000 questions engaged with and answered every day during term time.



Right Children sing the national anthem at a Cambridge schools conference in Karachi, Pakistan.



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Working with governments

Cambridge Assessment works closely with more than 50 ministries of education around the world, with some relationships going back half a century or more. Our partners are on every continent and working in every social and economic setting.

Attainment is a universal concern, even in high-performing countries, because a well-educated population is now central to any society's capacity to cope with change. There is a natural focus on educational excellence and the capacity to assess and validate quality.



Case study: **Malaysia**

In August 2016 Malaysia's Ministry of Education entered into a five-year partnership with Cambridge Assessment to provide support for a national programme which aims to enhance English proficiency among teachers and students. The partnership is part of a national strategy to ensure every child is proficient in the national language and in English as the international language of communication.

The agreement builds on the findings of the Cambridge Baseline Project, an in-depth study of the learning, teaching and assessment of English carried out in 2013. The ongoing collaboration will include advice on curriculum, assessment of learning materials, and actions for raising the standards of in-service and pre-service teacher education.



Case study: **Mongolia**

Cambridge Assessment International Education has had "an invaluable positive influence in advancing the quality of education reform in Mongolia", UNESCO, the United Nations Educational, Scientific and Cultural Organization, reported in late 2016. The country's Ministry of Education has been working with Cambridge International since 2011 on the development of new primary and secondary curricula and new skills for teachers.

The UN agency noted how Cambridge is "providing more efficient and successful methodologies for teaching practice, implementation of the new curriculum, and very good quality formative assessment practice".



Case study: **Oman**

Cambridge Assessment International Education is working with Cambridge University Press to develop and support Grade 1–8 Mathematics and Science syllabuses for Oman's Ministry of Education.

The project entails working with teachers and officials to develop specific Grade 1 to 4 assessment tools and build capacity for Omani development of Grade 5 to 8 assessment materials. The work complements the main part of the contract where CUP provides Omani-adapted textbooks for the Cambridge Primary and Lower Secondary curricula. It is anticipated that the Grade 1–8 project will run until the end of 2018; further discussions are due on how Cambridge International could help Oman develop higher education curricula and assessment.



Case study: **Dubai, UAE**

January 2017 saw Dubai's Knowledge and Human Development Authority sign an agreement opening fresh opportunities for holders of Cambridge Assessment English certificates. Cambridge Assessment English is now one of Dubai's recognised exam boards. Students holding selected certifications will be able to receive a statement of recognition showing comparability with the United Arab Emirates' National Qualifications Framework.



World-class *research*

Each and every learner benefits from our research, which is the foundation of all our qualifications and education programmes. Across Cambridge Assessment we have a team of more than 80 researchers, which gives us the largest specialist research capacity in assessment in Europe. It is this research strength that enables us to help teachers, learners and governments lead the way in education and unlock its power.

Our Assessment Research and Development division (ARD) is a multi-disciplinary team embracing mathematics, statistics, education, linguistics, psychology and computing. It includes 12 PhDs and 12 Master's. Between August 2016 and July 2017 the team published 24 journal articles and book chapters, together with five reports, and presented findings to 17 major conferences.

Impact

The impact of our research was demonstrated last year when the UK government announced that 8,000 primary schools in England would receive £41 million over four years to support a South Asian 'maths mastery' approach involving the use of high-quality textbooks. The announcement followed the launch by Tim Oates CBE, our Group Director of ARD, of the Cambridge Approach to Textbooks. A set of principles for designing high-quality textbooks and resource materials, the Cambridge Approach was the practical outcome of a paper Tim published in 2014 which called for high-quality textbooks to be restored in England's classrooms.

Setting fair grade boundaries

Should the top grade in a crucial examination for 16-year-olds be awarded to a fixed proportion of candidates gaining grade 7 and above (the equivalent of the old grade A)? That is the question England's exams regulator Ofqual asked about new 9–1 graded GCSEs in 2016. Group researcher Tom Benton proved that this risked denying recognition to some students taking subjects attracting high-ability cohorts – such as Latin – and designed a fair and feasible alternative.

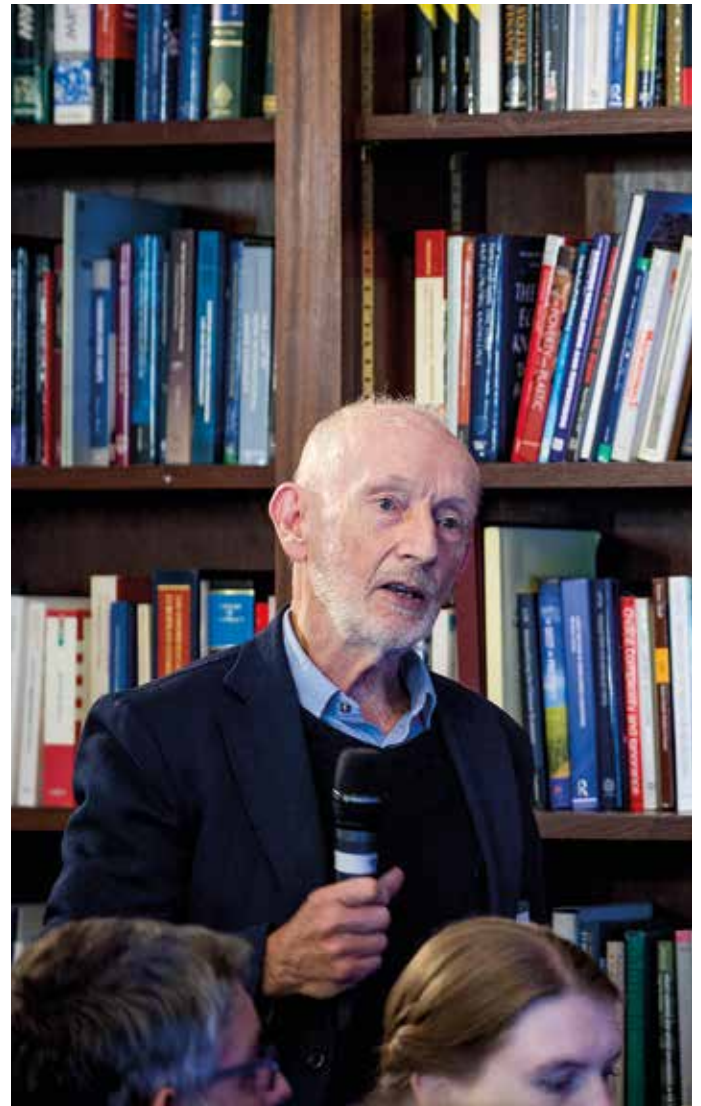
The Regulator agreed with his findings and grade 9 was awarded for the first time in August 2017 using the researcher's 'tailored approach'.



Cambridge Assessment researcher Tom Benton.

“Our Assessment Research and Development division is a *multi-disciplinary team* embracing mathematics, statistics, education, linguistics, psychology and computing.”

November 2016 saw the launch by Cambridge Assessment of Aspects of Writing, a major report on students' writing in exams.





Cambridge Assessment researcher Cara Crawford.



‘Text-speak’? Not in exams

Changes in language created by internet communication have not made it into the examination hall. A major report by our Research Division, *Aspects of Writing in 16+ English Examinations*, looked at whether students' writing has become more informal over time and triggered wide debate in educational circles and the media. It found almost no evidence of candidates using 'text-speak' abbreviations in their work.

Other key findings were that the incidence of spelling errors has changed very little among mid- and higher-attaining students; there has been a marked increase in the use of simple sentences among higher-attaining students; all students are using less complex sentence structures; students at most levels of attainment are using more paragraphs than their predecessors, and there is evidence that these are being used more appropriately.

Professor Debra Myhill, Pro-Vice-Chancellor of the University of Exeter, who reviewed the study, said it would be valuable to teachers, policymakers and researchers.

"The study gives teachers some real insights into their own students' work, but it is also important for policymakers in the UK," she said. "The patterns of change or absence of change can indicate issues for curriculum development, or evaluate the success of policy interventions."

The report is the latest phase of a unique study, in which quality of writing in GCSE English exams has been reviewed on a 10-yearly basis, since 1980.

Volatility happens

Concerns over fluctuations in school exam performance in England and their impact on teachers prompted Cambridge Assessment to investigate further the issue of volatility. The research, published in April 2017, built on an earlier study that ruled out exam grade boundaries and marking as major components of volatility. It showed that volatility in schools' exam results is normal, quantifiable and predictable.

"Students are not machines that can precisely access the same information from memory every single time it's required," the researchers Cara Crawford and Tom Benton said. "Each year different students enter for exams and therefore are not identical to the group of students that sat the previous year's exams."

Volatility Happens: Understanding Variation in Schools' GCSE Results used official data to predict 2016's fluctuations. The prediction was very close to what actually occurred, proving that most volatility can be explained by normal variations in students' abilities.

The model used in the report could be used by school leaders to better understand the range of performance they and their staff might encounter. The authors said that "the most important thing is that as a teacher you don't know what mix of abilities you'll get in a particular class each year. Recognising this ensures we have realistic expectations of our education and assessment system." The report has been received very positively by teachers.

“Across Cambridge Assessment we have a team of more than 80 researchers, which gives us the *largest specialist research* capacity in assessment in Europe. It is this research strength that enables us to help teachers, learners and governments *lead the way in education* and unlock its power.”



8

Developing digital

While most schools prefer to conduct tests and examinations on paper and will continue to do so for some time to come, digital is nonetheless already a significant factor in classroom teaching and distance learning. The past year saw significant developments by the Group in this area.

We now deliver over 20 per cent of our assessments online, and as this increases it will deliver more and more data which can be used to help shape policy at a national level. It can also help teachers spot and prioritise areas for improvement and to personalise learning according to individual needs. Goals, tasks and instruction can be scaffolded and adjusted to maximise learning opportunities.

Digital also opens the door to forms of assessment with rich possibilities. Video can be used to contextualise and stimulate; English composition can benefit from sound recordings; while science practicals can be lifted to another level via Virtual Reality.

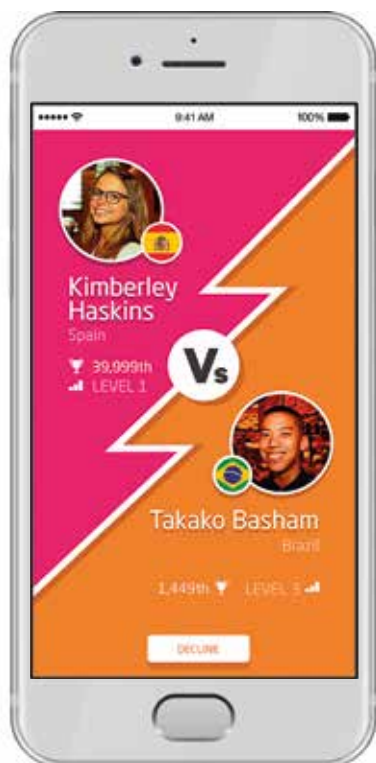
Learning in a digitally connected world

In the digitally connected world we live in, it is increasingly important to find new ways to equip students and teachers with the online tools they need to really make a difference. The year saw the launch by our English language exam board of a range of apps and online learning courses.



Above Rassina Assad (left) and Ahmad al-Rashid (right) are fronting the 'Aim Higher' Massive Open Online Course.

Right the *Quiz Your English* app.



Developments included *Quiz Your English*, which was a significant milestone in the digital learning space. The mobile app allows language learners around the world to go head-to-head in an English language quiz. Players can challenge people via social media to see who comes

out on top for vocabulary and grammar skills. Launched in March 2017, 1,785,000 games had been played by early September 2017 with around 10,000 new players installing it each week.

The year also saw the launch by Cambridge Assessment English of an online course to help refugees and asylum seekers get the information they need to apply to UK universities. Almost 1,700 people signed up for the Massive Open Online Course (MOOC) 'Aim Higher'. The course offers support in a range of areas, including identifying English language requirements, tips for improving English and how to choose the right course and university.

Cambridge Assessment English also successfully launched a number of other MOOCs, including 'Exploring the World of English Language Teaching', followed by 'Inside IELTS' and 'Teaching Your Subject in English'. In March 2017 figures showed that more than 350,000 people registered to take part in these online courses.

Another development has been 'Write and Improve', a new product that allows students to choose a topic, write about it in English and get instant feedback. Well over a million pieces of writing have been submitted and checked since September 2016. In less than a year it had been used by 675,981 people in 225 countries, with 40 per cent accessing the app via mobiles.

Informing debate

The Group places a high value on promoting informed debate on education. We not only offer our own insights, but also provide platforms for other distinguished experts to offer theirs.

Under the over-arching Cambridge brand, our exam boards Cambridge Assessment International Education and Cambridge Assessment English joined forces with Cambridge University Press as Platinum Partners for the Education World Forum, the world's largest gathering of education and skills ministers, in January 2017.

Cambridge Assessment International Education Chief Executive Michael O'Sullivan CMG addressed the conference, telling delegates that good assessment should not be just about measuring what students know.

"Good assessment is at the heart of a good education," he said. "And for assessment to work well, the questions used to test students' understanding need to have been designed well. This is true for both formative assessment – the questions that teachers ask every day in the classroom – and for summative assessment – the end-of-year tests and public exams. Educators should always ask themselves 'How do I know that the questions my students are being asked are helping them learn?'"

Expert voices

Traditional approaches to learning are confirmed by findings from cognitive science and are prerequisites for higher-order thinking. "'Traditional' means we've been doing it for two, three, five centuries. It's actually a good indication that it works because our memory system can do this stuff."

This was the message to the Cambridge Assessment Network's October 2016 seminar from Dr Helen Abadzi, a cognitive psychologist and neuroscientist with 27 years' experience of education's role in global development gained while working at the World Bank.

She said that rote learning, homework, textbooks, times tables and phonics all ensure children acquire fluency and 'automaticity' in basic skills.

"A class of children sitting and listening is viewed as a negative thing, yet lecturing is highly effective for brief periods," she said. She added that there was a reason that some elements of traditional teaching had stood the test of time – they help the brain remember and make correct decisions.

Choice is best in exams

October 2016 saw the publication of a Cambridge Assessment supported report into the UK's national qualifications. *Who's to Produce and Who's to Choose? Assessing the Future of the Qualifications and Assessment Market*, was written by the Centre for Education Economics think tank.

It found no evidence that choice and competition have led to a decline in standards in the UK's national qualifications. It concluded that moving to a single government exam board in England would be likely to increase costs without improving quality, would reduce the potential for innovation, and would pose risks.

Sharing knowledge

There is robust international evidence of a link between school systems going through periods of sustained improvement and appropriate accountability measures, the UK House of Commons' Education Select Committee heard in January 2017. Group Director, Assessment Research and Development, Tim Oates CBE was giving evidence to the committee's inquiry into primary assessment as chair of the expert panel which reviewed the National Curriculum in England.

Tim argued that the current accountability system in England had the right focus, "producing a great deal of data which allows us to understand three important things: variations in pupil performance within schools, variations in performance between schools and evidence about the performance of the education system as a whole."

"We not only offer *our own insights*, but also provide platforms for other *distinguished experts* to offer theirs."



Above Michael O'Sullivan CMG, Chief Executive of Cambridge Assessment International Education, addresses the Education World Forum.



Left Dr Helen Abadzi told a Cambridge Assessment Network seminar that traditional approaches to learning should not be abandoned.

The hidden wiring: *running the Group*

Cambridge Assessment has trebled in size since 2002 and this has led to an increase in the complexity of the operations supporting our business and the technology required to deliver it. We have invested massively in our technological infrastructure, committing approximately £30 million in the past year to our IT systems.

Our offices around the world



- | | | | |
|---------------------------------|---------------------------|-------------------------------|-----------------------------|
| 1. Cambridge, UK | 15. Mumbai, India | 29. Beijing, China | 43. Accra, Ghana |
| 2. Coventry, UK | 16. New Delhi, India | 30. Chengdu, China | 44. Buenos Aires, Argentina |
| 3. Nottingham, UK | 17. Chennai, India | 31. Manila, Philippines | 45. Lima, Peru |
| 4. Paris, France | 18. Dhaka, Bangladesh | 32. Ho Chi Minh City, Vietnam | 46. Bogotá, Colombia |
| 5. Lyon, France | 19. Islamabad, Pakistan | 33. Hong Kong | 47. Rio de Janeiro, Brazil |
| 6. Berlin, Germany | 20. Lahore, Pakistan | 34. Tokyo, Japan | 48. São Paulo, Brazil |
| 7. Warsaw, Poland | 21. Karachi, Pakistan | 35. Jakarta, Indonesia | 49. Mexico City, Mexico |
| 8. Bologna, Italy | 22. Colombo, Sri Lanka | 36. Kuala Lumpur, Malaysia | 50. Michigan, USA |
| 9. Naples, Italy | 23. Auckland, New Zealand | 37. Singapore | 51. Florida, USA |
| 10. Athens, Greece | 24. Sydney, Australia | 38. Pretoria, South Africa | 52. Colorado, USA |
| 11. Madrid, Spain | 25. Melbourne, Australia | 39. Cairo, Egypt | 53. Wisconsin, USA |
| 12. Madrid, Spain | 26. Taipei, Taiwan | 40. Alexandria, Egypt | 54. New York, USA |
| 13. Istanbul, Turkey | 27. Guangzhou, China | 41. Nairobi, Kenya | |
| 14. Dubai, United Arab Emirates | 28. Shanghai, China | 42. Cape Town, South Africa | |

We *handled* and *processed*

10 million

exam items during
the last year

On-site printing *produced*

0.5 billion sides

of A4 confidential
question papers

36.5 million

sides of *exam scripts* for
marking *were scanned*
in the last 12 months,

the highest volume ever

Automation has reduced
incoming script package handling
turnaround from up to

four days to
40 minutes

Our physical estate has continued to grow. In the last year we have set up new Cambridge Assessment International Education offices in Kenya and Ghana plus Cambridge Assessment English entities in China and India. Tax, legal and HR colleagues have worked hard to ensure that our activities meet the compliance requirements of several national regimes. Our new regional hub offices are consolidated operations, with Cambridge Assessment English sharing facilities with Cambridge Assessment International Education.

Our logistical operations

The Group has two distribution centres, known as DC10 and DC20, which handle our huge and complex logistical operations. DC10's size (22,000 square metres and 20 kilometres of racking) and its effective management of complexity has attracted many official visitors over the past year, including the England exams Chief Regulator and officials from England's Department for Education. Bulgarian national TV filmed there and declared that its operations were "like ballet – flexible, strong, glides with apparent ease though managing complexity, very well prepared, entirely dependent on team effort, safety paramount to success, appreciated by others... beautiful".

Whatever the pace of change it is important to deliver an excellent everyday service. We are always working to be more user-friendly, making access and functions simpler,

easier and more efficient for schools and learners. One recent example is how we have transformed the way we handle mail re-direction of post-exam materials. We previously did the process manually, but an automated solution has enabled a 400 per cent increase in the installed production capacity, meaning it is capable of handling over three million exam packets a year. Delivered goods are now processed as soon as they arrive, within the same day. Another example is a Group-wide 'Black Belt' collaborative project to strip waste from the supply chain, which took Cambridge Assessment English's order-to-print scheduling down from 10 weeks to three weeks.

**"Bulgarian national TV
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entirely dependent on team
effort, safety paramount
to success, appreciated by
others... beautiful'."**



Below Seen from the air: work taking place to complete our new purpose-built Cambridge head office, Triangle.



Left 'In Other Words' by Vong Phaophanit and Claire Oboussier, a public art commission which features at the entrance of our new head office and at the top of the building's tower.

Environmental progress

Energy efficiency and sustainability have been key factors in the development of Triangle, our new purpose-built Cambridge head office. The use of sustainable heating and cooling systems and a design that allows for superior levels of natural light and ventilation means Triangle will save about 30 per cent in energy costs compared to our current estate.

We have also been committed to sustainable and responsible methods and materials in the construction of Triangle, and will be using renewable energy to help power the building. The gardens have been designed to play host to local wildlife, with a brown roof and habitats for flora and fauna such as bat boxes.

We have also made a clear commitment to sustainable transport to work, promoting and incentivising walking, cycling and the use of public transport. That has meant creating more than 1,100 cycle spaces, offering pool bikes for staff and securing discounts for staff travelling by train.

Meanwhile, our two distribution centres generated over 75,000 kilowatt hours of electricity from roof-mounted solar panels, power which we were able to use across both sites. We now send zero waste to landfill by recycling all confidential and non-confidential materials, and we will maintain this commitment at Triangle.

A new brand

This year we completed our rebranding. The previous Cambridge Assessment branding and logo were introduced in 2005, and after 12 years it was felt appropriate to update and replace them. The new branding more directly reflects our status as part of the University and provides an effective vehicle for greater collaboration – both across the Group and the wider University, and particularly with Cambridge University Press, near to whom we will of course relocate in 2018. We were also keen to prepare for the move to Triangle, where we will be bringing staff from the 11 buildings we have scattered around Cambridge under one roof. The new brand emphasises our common identity as members of the same Group.

The other big driver for our new brand was the fact that we are increasingly working together across the different business units within the Group, particularly in terms of some of the education reform, digital developments and teacher training activities we are engaged in. The new brand gives us a more explicit and prominent vehicle for communicating the range and coherence of the Group's entire product offering.



“Our new branding more directly reflects our status as *part of the University* and provides an effective vehicle for greater collaboration.”

Talent development

Demand for our products and services from around the world created hundreds of new vacancies over the past year, often in highly skilled areas. During 2016–17 more than 400 new starters joined the Group, and we held induction workshops to welcome them to the organisation and help support their early career with us.

We continue to invest heavily in talent development in order to support our growth and to make sure we can respond to increasing customer expectations. A particular focus is leadership development: during 2016–17, more than 60 people took part in our programme to develop our senior managers, Inspiring Leaders, with the programme being held outside the UK for the first time, in Dubai. Last year saw the launch of our new programme for middle managers, Jigsaw, and this year more than 80 members of staff took part. Designed to help develop confident and competent managers, it complements our successful Aspiring Managers development programme, which is now in its sixth year and has seen more than 30 high-potential employees take part. We are pleased to report that over half of those who took part in Aspiring Managers have been able to secure promotions within the organisation.

We also continued to provide training for our project teams in PRINCE2 (Projects in Controlled Environments), a method for effective project management developed as a UK government standard. More than 30 project managers gained formal qualifications during 2016–17.

As well as training in leadership and business effectiveness, we also support our people to build their expertise in assessment as it is practised in the UK and globally. Last year

13 people from across the Group took the Postgraduate Certificate in Educational Assessment and Examinations, which is a Master's-level, part-time course run by our Cambridge Assessment Network and the University's Faculty of Education. During 2016–17 the Network hosted 14 specialist training events, seminars and international courses, welcoming more than 500 delegates.

This year marks two years since the launch of our Building a Culture of Learning strategy, and in February 2017 the approach received an accolade when our Group Head of Learning & Development was named Chief Learning Officer of the Year in the Learning and Performance Institute's annual awards, which recognise the best of workplace learning from across the globe. Our approach is not about courses that staff have been on, but about what they can learn, with little in the way of mandatory instruction. Our courses, and personalised coaching and mentoring schemes, have waiting lists because colleagues see the difference these make in their daily working lives.



Naomi Lockwood and Jo Byrne, from Cambridge Assessment's Talent team, pictured with TV presenter Claudia Winkleman, the host of the Learning and Performance Institute awards.



Simon *leaves us*

Group Chief Executive
Simon Lebus.



I write this Afterword with some sadness as I will be standing down as Chief Executive in March after nearly 16 years in the role. The period since I joined Cambridge Assessment on 1 July 2002 has seen some massive changes, and I thought I would take this opportunity to reflect on those and to try to anticipate what comes next.

First of all the name of Cambridge Assessment itself has changed. We were known when I joined as the University of Cambridge Local Examinations Syndicate (still our legal title) and one of my earliest decisions was to change this to a more easily comprehensible, modern and accurately descriptive title, and to jettison "Syndicate" which was incomprehensible to many and had unfortunate associations for some! As a brand, the organisation's new name, Cambridge Assessment, honoured our links with the University (something reinforced in our recent brand refresh) but also recognised the much broader educational role of assessment (something wider than exams) as an activity that sits at the heart of learning.

Another reason for wanting to take a new name was that the balance of our activity was changing in such a way that the designation of 'Local' examinations was confusing. We were already an organisation with a global footprint – our exams then were taken in around 150 different countries – but the years since have seen a huge growth in the size of our international business. In 2002 75 per cent of the Group's then £129 million annual revenue was generated in the UK while 25 per cent came from our international operations. That is now almost precisely reversed and in the financial year 2016/17 less than 20 per cent of our £413 million revenue came from UK schools, with the remaining 80 per cent being derived from international sources.

Simon pictured at a 2015 event to celebrate the growing number of Cambridge schools in Sub-Saharan Africa.



What has driven that? Two trends especially stand out. One is the continued growth in the demand for English language learning. As one of the two largest English language testing organisations globally we have benefited hugely from that, with a battery of tests designed to support learners from the very beginning of their time learning English right up to the point where they are more or less completely fluent. Having such a comprehensive range of tests, covering every level of English language capability, has been especially important at a time when English language learning is being introduced earlier and earlier in most countries' national curricula. The second has been the huge growth in the size of the international middle class, which estimates suggest has increased from around 1.5 billion people in 2000 to around 3 billion now, with further growth predicted to around 4.5 billion by 2030. This has fuelled a huge demand for schools that offer an international, English-medium curriculum and these have increased from around 1,000 20 years ago to more than 8,000 now. Cambridge Assessment International Education programmes and exams provide the curriculum most commonly used in these schools and the several thousand others offering blended national and international curricula.

Those are all trends that have favoured growth, and one of my biggest challenges in the role has been to make sure that we have been in a good position to respond to these. Also challenging has been the rather different position in the UK. There (or more accurately in England as Scotland has its own system and only a relatively small number of schools in Wales and Northern Ireland use our qualifications) the picture has been more volatile and we have seen a series of political interventions in qualifications policy which initially increased

but have now reduced uptake. I arrived just in time for the completion of the first Curriculum 2000 exam cycle which introduced modular AS & A Levels; that was followed not long after by the introduction of modular GCSEs. That process of modularisation (which increased the overall number of exam papers being sat) in conjunction with the liberal availability of funding for vocational and skills-based qualifications led to a massive increase in volumes. However, this trend came to a fairly abrupt halt after the election of the Coalition Government in 2010, when many of the changes of previous years were reversed and funding was cut back, the consequence being that OCR's income is now lower than it was when I started, despite the greatly increased number of students taking our exams, something that we have had to deal with by a lot of hard work to improve the efficiency of our processes.

This changeability in the qualifications regime of course reflects the underlying reality that qualifications are one of the most powerful and easily manipulated policy instruments for effecting change in the education system. That has been compounded by the very rapid turnover in Secretaries of State (nine since 2002 with an average tenure of less than two years) all with their own ideas, policy preoccupations and determination to make an impact in the little time available to them, and all trying to get to grips with a highly complex and diverse system. Inevitably this has produced a volatile and often incoherent policy environment in which it has sometimes been challenging for exam boards to operate.

This was one of our reasons for developing the Cambridge Pre-U, which we launched in 2009 as an alternative to A Levels, like International A Levels and the IB, a qualification that sits

“It has been a
privilege to work
for an organisation
which has supported
many millions of
young people as they
progress to the next
stage of their lives.”

Simon Lebus, Group Chief Executive

Simon pictured on a visit in January 2015 to the Sitma factory in Bologna, Italy, which manufactures the machines we use to process the 36 million question papers we send to 170 countries worldwide.



In November 2005, Simon visited Pakistan to celebrate 90 years of students in the country taking Cambridge International examinations. He is pictured planting a commemorative tree at St Mary's Academy, Rawalpindi.



outside the range of government-controlled qualifications, allowing us greater control of the educational content and meaning it was immune to government interference and as such less susceptible to the constant and destabilising cycle of rapid change.

Another way we have sought to deal with that has been to invest heavily in our research effort. It was obvious from the furore that greeted the introduction of the first Curriculum 2000 A Levels in 2002 (known subsequently as the 'Great A Level crisis') that public discourse about, and understanding of assessment was not as good as it needed to be, especially at a time of rapid change in the education system. We were fortunate therefore in being able to take advantage of a supportive owner in the form of the University (we are the only remaining university-owned Awarding Body) to upscale our research effort. I was delighted that we were able to recruit Tim Oates, who had previously been Director of Research at the Qualifications and Curriculum Authority (QCA – the English Exam Regulator and Ofqual's predecessor body) to spearhead this, and we deliberately sought to focus on research areas that would improve professional and public understanding of the role of assessment and the way in which it sits at the heart of education, especially important at a time when the A Level and GCSE system was being reformed in order to support rising

participation in secondary and higher education, and when demand for qualifications was increasing in response to a competitive and rapidly changing labour market.

In 2005 we launched our Research Matters journal, published quarterly in order to disseminate the results of our research. We also set up the Cambridge Assessment Network to provide training and high-quality open-access seminars about educational assessment. Other important initiatives included the publication of *The Cambridge Approach to Assessment* in 2009 and more recently *The Cambridge Approach to Textbooks* and *A Cambridge Approach to Improving Education*. Work on international standards and textbooks in particular has influenced government policy, both in the UK and internationally, while internally the research team have supported our awarding with the provision of high-quality specialist data which, among other things, has allowed us to improve marking standards through real-time marker monitoring.

One of the criticisms made of the English exam system in 2002 by Ken Boston, the then newly appointed Australian head of the QCA, was that it was run like a cottage industry. This was not entirely fair, and the crisis of 2002 was arguably more the result of QCA's failure to take earlier advice about the impact

“We were already an organisation with a global footprint, but the years since I joined have seen a huge growth in the size of our international business.”

Right Simon addresses the 34th International Association for Educational Assessment Conference in September 2008, which was hosted by Cambridge Assessment as part of its 150th anniversary celebrations.

Below opposite Simon pictured on a visit to a Cambridge school in Singapore, the United World College of South East Asia, in April 2013.



on standards of the design of the new AS & A Levels, itself a function of its seeming incapacity to manage the politicians with whom it was dealing, and its highly informal approach to trying to achieve regulatory suasion of the exam boards. 2002 nonetheless marked a watershed and the years since have seen massive investment across the board in order to modernise many different aspects of the exam system.

One major element of this has been the migration to online marking of nearly all our exams. This was a process that started in 2004 when I signed an agreement with RM for us to start work developing an online marking platform. Many millions of pounds and a few years later this became the industry-leading online marking application now known as Scoris and this year some 104 million pages of our exam scripts were scanned and marked online using Scoris, with the significant benefit that they find their way to markers more quickly than when the system depended on the physical transit of scripts, and with quality benefits in terms of being able to achieve random distribution of scripts to markers and improved quality of marker monitoring; there is the additional benefit, too, that scripts no longer get lost in the post!

We also now deliver several hundred thousand tests a year online. This is especially popular with some of our smaller session English language exams which are taken several times a year, while exams such as A Levels which are taken only once or twice a year in very large numbers have yet to transfer, reflecting the reality that the levels of technology infrastructure in schools are still not robust or consistent enough to support a secure migration. It nonetheless remains the case that that is the ultimate ambition, not least as many students are now

more familiar with writing on a keyboard than with a pen, and it also offers the opportunity to develop more authentic and engaging question types for a generation of students much of whose learning happens online. However, multiple challenges remain before that vision is achieved, as much to do with the nature of learning and assessment as with technology.

In addition to the investment needed to develop Scoris and modernise other components of our technology infrastructure to cope with the increased volumes of activity (the business has more than trebled in size since 2002), I was also very conscious of the need to scale up our physical infrastructure. We were lucky enough to be able to acquire a 12-acre warehouse site south of Cambridge in 2006 in which we consolidated the exam paper printing and logistical activities that had previously been carried out in a number of buildings in and around Cambridge. This has since expanded hugely and last year we sent out and received 110 million packages of exam and other material there, leading us in 2015 to acquire a further distribution centre west of Cambridge to give us extra capacity and improved resilience.

We also developed a large Data Centre at the Trinity Science Park and are one of three tenants in the University's data centre in north-west Cambridge, which houses on our behalf 4,300 virtual servers which support 137 critical systems with a storage capacity of 3 petabytes, reflecting the very data-intensive nature of our work – a considerable change from 2002 when everything was based in the flood-prone basement of our 1 Hills Road, Cambridge, office in a space shared with the Archives.

I am also very pleased to have been responsible for our other major infrastructure investment, the development



Simon and Neil Pixley from construction firm Bouygues UK dig the first piece of ground at Cambridge Assessment's new headquarters, Triangle.



and construction of our new £210 million Cambridge office (known as 'Triangle' because of its shape), the new home into which we will move in 2018. It is built on land acquired from Cambridge University Press (CUP) – the site of their old warehouse – and it will allow us to bring together some 2,000 Cambridge staff, currently spread across 11 different buildings in and around Cambridge. It will also provide a good modern office environment – that it should be light and airy was a key part of the brief to the architect – and a common space that will allow all the different constituent parts of the business to work together much more closely, especially important as many of our customers are now looking for total curriculum solutions spanning the capabilities of the different business units and involving both general academic and English language qualifications. Qualifications, of course, also depend critically on the quality of available teacher and learner support in the form

of textbooks and increasingly also various digital resources, and our physical proximity to CUP will allow for much closer collaboration in producing these.

That is a very quick run through of what has been an exciting and eventful 15 years. As I mentioned earlier Cambridge Assessment has trebled in size during my time at the helm and today's organisation is radically different from the one I joined in 2002. I am sure that velocity of change will continue, but I am also convinced that public exams will remain an essential part of most countries' education systems for many years to come. Of course the change that has taken place is not just a story about growth and how we have managed it; it is also a story about changing expectations and the way in which exams have been impacted by other things that have gone on in the world. At a societal level, there is a much greater readiness to challenge professional judgement, reflected in rising complaint levels and occasional litigation. Social media also ensure that exam post-mortems are available and in the public domain as soon as candidates leave the exam hall and that is tied in with a more consumerist attitude to education generally, something historically that exam boards have not had to deal with. Also very notable has been the development of hyper accountability with its increasing emphasis on league tables and the use of exam results to judge teachers and school performance. That being said there will always be a need for good-quality qualifications and it has been a privilege, and from a personal point of view a deeply fulfilling experience, to work for so long, in conjunction with so many dedicated and committed colleagues, for an organisation that takes that need so seriously and which has, in the process, supported many millions of young people as they progress to the next stage of their lives.

Abstract of the *Financial Statements* of the Cambridge Assessment Group

Abstract of the Consolidated Statement of Comprehensive Income for the year ended 31 July 2017

	2017 £m	2016 £m
Sales	413.1	392.8
Investment income	7.7	7.4
Total expenditure	(341.9)	(339.3)
	78.9	60.9
Loss on disposal of fixed assets	(0.2)	—
Net gain on investments	25.5	10.5
Share of operating surplus in joint ventures	1.0	1.6
Taxation (overseas taxation)	(0.2)	(0.2)
Surplus for the year	105.0	72.8
Other comprehensive income: currency translation differences	0.3	0.7
Total comprehensive income for the year	105.3	73.5

Abstract of the Consolidated Balance Sheets as at 31 July 2017

	2017 £m	2016 £m
Non-current assets		
Intangible assets and goodwill	40.4	39.0
Fixed assets	295.3	197.1
Investments	240.7	214.1
	576.4	450.2
Current assets		
Trade and other receivables	95.2	88.8
Cash and cash equivalents	62.4	106.5
	157.6	195.3
Creditors: amounts falling due within one year	(111.4)	(102.1)
Net current assets	46.2	93.2
Total assets less current liabilities	622.6	543.4
Creditors: amounts falling due after more than one year	(2.6)	(3.9)
Pension scheme liabilities	(22.4)	(24.4)
Provisions for liabilities	(2.2)	(1.0)
Total net assets	595.4	514.1
Reserves		
Restricted reserves – endowment reserve	6.1	5.5
Unrestricted reserves – income and expenditure reserve	588.8	508.3
Non-controlling interest	0.5	0.3
Total reserves	595.4	514.1



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