Mobile Education in the United Kingdom

This document is part of a series of country specific reports which consider the demand for Mobile Education from the formal education sector perspective.

Foreword

For the Education sector, mobile connectivity provides an opportunity to offer new ways of teaching and learning that ultimately will improve performance and results whilst at the same time open up new markets for mobile operators across the world. Mobile will increase access to up-to-date materials, will enable collaboration and strengthen learner engagement. In response to this opportunity, the GSMA's Mobile Education initiative aims to accelerate the adoption of Mobile Education solutions; in particular, the use of mobile-enabled portable devices, such as e-Readers and tablets in mainstream education settings.

This document is part of a series of country specific reports which consider the demand for Mobile Education from the formal education sector perspective in each country. In each we describe the delivery models in place for the main types of education along with examples of activities already underway. To date country specific reports have been developed for the United States, United Kingdom, Spain, Japan and France.

The GSMA Mobile Education Landscape Report describes the market for Mobile Education from a global perspective, focusing on the supply side. It describes trends, key players and current initiatives in the emerging Mobile Education and related e-Textbook publishing markets. An accompanying background document; Education Systems – A Brief Introduction gives background on how education segments and systems function and describes flows of funding.

We encourage you to get involved, whichever part of the ecosystem you belong to, please contact **mobileeducation@gsm.org** to learn how.

Erik Brenneis
Head of Vodafone Global M2M
VODAFONE

Vodafone is looking forward to working with the GSMA on the Mobile Education initiative which aims to help shape how mobile technology will be used in the classroom.

We are encouraged by the advanced use of ICT by many educational institutions in the UK and anticipate that many will be receptive to Mobile Education solutions in the near to medium term. In the future, students could be interacting with teachers, reviewing lessons and completing assignments all from a mobile device which will have myriad benefits for all.

We believe the telecoms industry has a significant role to play and only by working together will the Mobile and Education sectors be able to tackle some of the wider challenges. We are excited about the possibilities and opportunities this will generate for Vodafone as an organisation and the wider benefits for students and society.

GSMA Mobile Education

Contents

1 Introduction

Background

This report on Mobile Education in the UK is one of a series of reports which collectively describe the emerging market for Mobile Education. At a country level, as well as this report on UK, there are reports on the United States, Japan, Spain and France. These country-specific reports focus primarily on the demand side of Mobile Education. The Mobile Education Landscape Report considers the development of Mobile Education from a global perspective, focusing more on the supply side. An accompanying primer on education systems gives background on how education segments and systems function and describes flows of funding.

Objective

The key objective of this report is to examine the current take-up and uses of Mobile Education technologies across different education segments in the UK and explore possibilities for their expected growth.

Structure

The report opens with a summary of the key takeaways, including the specific barriers facing Mobile Education in the UK. This is followed by a high level overview of the education system.

The report then describes three different education segments: schools, technical and vocational education and training (TVET), and higher education. For each segment, we describe the education system and give context on use of technology. We then look at the development of Mobile Education, describing what is already in place in terms of a 'Mobile Education ecosystem', identifying and describing selected initiatives and drawing out lessons learned.

Target Audience

The target audience for this report is managers from:

- Mobile ecosystem organisations responsible for consumer devices, institutional customers or M2M services.
- Education content organisations looking to expand in to Mobile Education.
- System and software developers with an interest in developing Mobile Education solutions.
- Government departments or education institutions wishing to understand more about the landscape of Mobile Education in the UK.

Definitions

The main focus of this report is Mobile Education, which is interpreted as:

- Use of individual, portable devices (e.g. e-Readers, tablets, Personal Digital Assistants (PDAs), and smartphones), which make use of the mobile network (i.e. are SIM-enabled).
- Used in mainstream education settings (e.g. primary, secondary, college, workplace, distance learning, professional qualifications), therefore aligning with curriculum objectives or used for high-stakes assessment, and will cover both learning (e.g. interactive learning), content (e.g. textbooks) and administration (e.g. school records, attendance, communications).

For the country reports, we describe the use of Mobile Education across the three main education segments, which can be defined as:

- **Schools:** learning is delivered only in formal education settings in specific institutions with clear flows of funding.
- **Technical and Vocational Education and Training (TVET):** learning is delivered in a wide variety of settings, including formal education institutions, the work-place, via distance learning and in casual or self-directed settings (the latter are informal learning settings). Activities can include learning for qualifications, training for specific tasks or skills, training for 'softer' management skills, leadership development skills, certifications, professional training, etc. Mostly formal settings are described in this report.
- **Higher Education (HE) (also referred to as Tertiary Education):** learning is delivered mostly in formal education settings in specific institutions with clear flows of funding, but can also be delivered as distance learning.

The school and higher education systems are generally clear and straightforward to describe, but the systems for TVET can be more complicated. In part this is because they typically overlap with the school and higher education sectors, but also the policy focus can be quite variable.

Finally, responsibility for education policy in the UK is devolved to the four constituent countries, resulting in some differences across England, Scotland, Wales and Northern Ireland. In this report we mainly describe the system in England.

2 Key Takeaways

The main points about education and Mobile Education in the UK are:

- In general, education institutions enjoy autonomy and decision-making powers. This is especially true for decisions about technology adoption. There are also a wide range of stakeholders playing a significant role stimulating and supporting innovation and adoption of new technologies, including Mobile Education.
- UK education institutions are well equipped with ICT following a decade of policy support and investment by the previous Government. As a result, the use of e-Education and digital resources is well-established. However, there remains a disconnect when it comes to high-stakes examinations, where students are still examined by traditional methods.
- As is the case in many countries, the goal of 1:1 ratios for devices – mostly laptops, and sometimes games consoles or tablets – for students is becoming increasingly articulated and in a few instances, realised. However, when this concept becomes linked with mobile devices, many remain wary of having phones in classrooms. Questions are emerging around the use of learners own devices, which seems increasingly possible from technical point of view, but there are still issues of the digital divide.
- A growing number of Mobile Education projects, trials and initiatives have highlighted the challenges of implementation and adoption. They are led by a variety of stakeholders, including teachers, institutions; large collaborative research. Most initiatives generate interest from a research perspective but few go on to be fully implemented and many disappear once external funding ceases.
- Schools are managing to preserve their ICT budgets, but are frequently tied to existing systems making the leap to Mobile Education difficult. Initiatives in this sector are innovative, exciting but largely one-off and isolated. However, the growth of Academies may offer a platform for innovation, perhaps via sponsorship or partnership with commercial providers.
- Learning in the TVET segment lends itself well to Mobile Education and there are examples of interesting initiatives and successful implementations. A key factor has been the Mobile Learning Network (MoLeNET) programme, one of the largest scale mobile learning initiatives in the world. The programme has now closed, but a great deal of effective innovation has been embraced and there are now 8 pioneering MoLeNET academies in place to drive best practice across the sector.
- For universities, which are increasingly expected to compete for students, the use of ICT, and potentially Mobile Education, to support students may emerge as a differentiator. There is an increasing expectation for universities to provide access to their central learning systems via students own mobile devices as a minimum, but it seems yet to be embraced. However, this is a sector facing a great deal of change, so ICT and Mobile Education may not currently be top of the agenda.
- Mobile Education as a market has yet to fully take shape, Leading companies are developing native mobile platforms that are increasingly being adopted, smaller innovators are making inroads and there is at least one example of a device targeting the education sector. There are many signs that there is significant potential in the market.

- The specific challenges for the development of Mobile Education in the UK are:
  - Abolition of BECTA, which was the Government's agency for promoting technology in education. and 'hands off' Government policy mean lack of strategic leadership and central guidance or support.
  - Tight funding regime in place, with little money for investment in new equipment.
  - Schools and Local Authorities tied into Regional Broadband Consortium contracts, for internet access and a broader range of resources and services.
  - Poor bandwidth in secondary schools.
  - Reluctance of teachers to have mobile phones in the classroom.
  - Concerns over e-Safety and child protection.
  - Concerns over digital divide if learners are to ultimately use their own devices.
  - Awarding bodies yet to embrace Mobile Education, particularly e-Assessment, on any sort of scale – need their buy-in for any high stakes qualifications.

3 Education System

Public provision of education is the norm in the UK – only 7% of school pupils are enrolled in private schools and there are only two private universities. Full-time education is compulsory from age 5 to 16 and in the UK this is predominately delivered in public primary and secondary schools.[1] Total education spend in the UK in 2009-10 was £87.6 billion ($166.6 billion), which is 6.2% of GDP. Some £55.6 billion ($74 billion) was estimated as local authority expenditure and £32.1 billion ($42.7 billion) as central government expenditure.

Policy making is devolved to the Education Departments of constituent UK countries. Across the UK, the common model is a decentralised system, with largely autonomous decision making at institution level. In some areas, levels of autonomy are increasing, especially schools in England where new types of schools called Academies and Free Schools are expanding. Decisions about IT strategy and spending are therefore also mostly made in schools, colleges and universities, although the Local Authorities do also make some purchasing decisions in services for schools in their areas. Until recently, centrally led and funded IT policy has been a significant driver, but this currently looks more uncertain.

Constrained economic conditions and the change of Government in 2010 have led to constant scrutiny of public finances and policies. As a result, education policy and strategy is in a state of flux and the whole sector, particularly further education (FE) and higher education (HE), is facing stalled investment plans and budget cuts. University teaching budgets are to be cut by 40% by 2014. School budgets remain uncut, but are not rising in 'real' terms, but here the central technology policy and support has been drastically cut, with the gauntlet passed determinedly to schools.

Table: Education in the UK[2]

Phase	Age	Number of Students*	Expenditure	Types of Institution
Pre-school and Nursery	0-5	152,500	£4.9 billion ($ 6.5 billion)	■ State funded nurseries/ pre-schools ■ Private or voluntary nurseries ■ Playgroups
Primary	5-11	4,882,000	£23.7 billion ($ 31.6 billion)	■ Infant schools ■ Junior Schools ■ Primary schools
Secondary	11-18 compulsory to 16	3,906,700	£38.8 billion ($ 51.6billion)	■ Secondary schools
Further Education	16+	10,135,000	■ Tertiary - £12.8 billion ($17 billion) ■ Adult learning - £1.8 billion ($2.4 billion) ■ Apprenticeships - £1.3 billion ($1.7 billion) ■ Employer expenditure - £19.4 billion ($25.8 billion)	■ Sixth forms of schools ■ Sixth form colleges ■ Further education colleges
Higher Education	18+	2,556,600		■ Further education colleges ■ Universities
Job Related Training**	16+	4,936,000		■ Further education colleges ■ Private training providers ■ Employers

* In state funded institutions, includes full-time and part-time students

** Survey data – participation in work related training in last four weeks

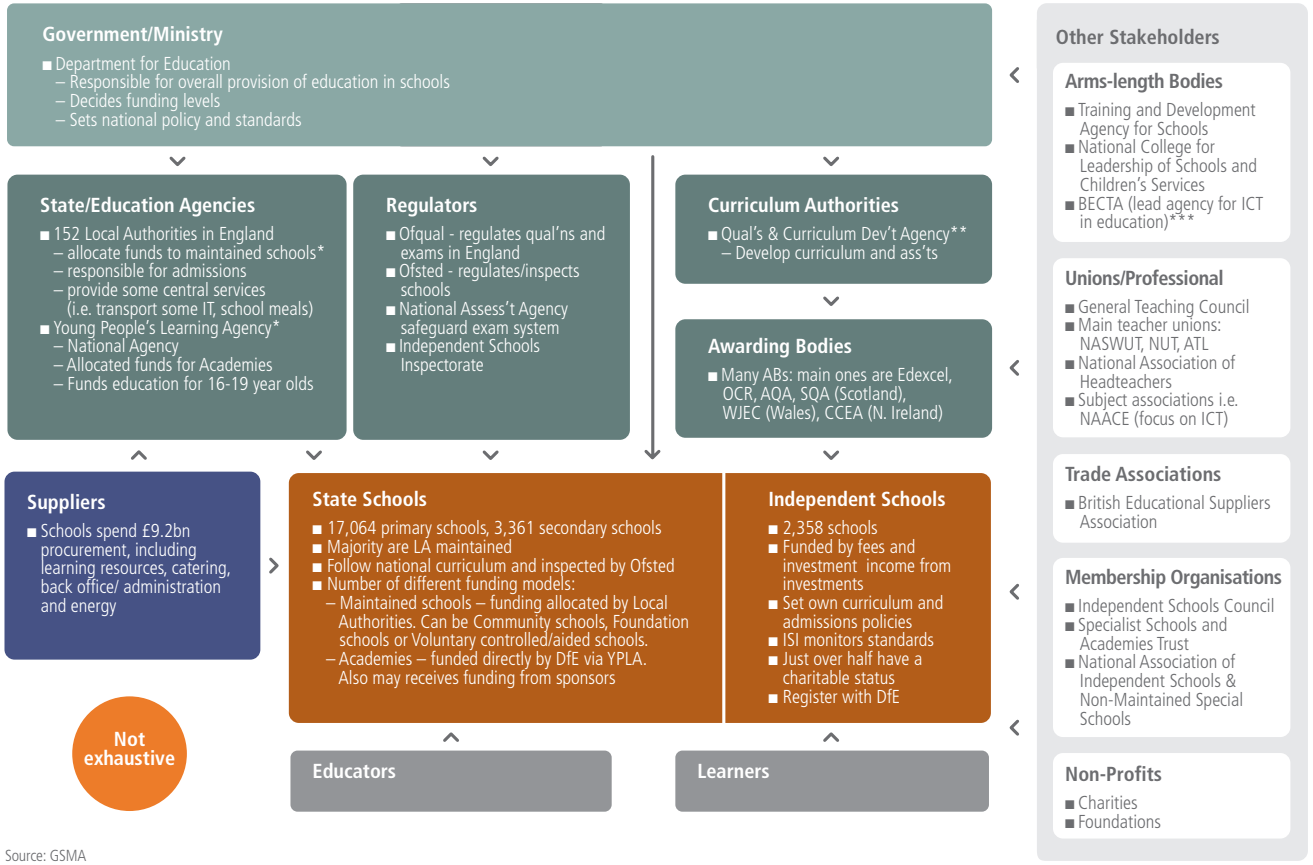
1 Reforms under the *Education and Skills Act 2008*, legislated that students must continue in some form of education or training until they are 18. Comes in to force in 2013

2 DfE, *Education and Training Statistics*, 2010; House of Commons Written Answer, 1 March 2011, *Training Market Report*, Keynote, January 2011

4 Schools

As already indicated, the ecosystem for schools described here relates to England. The systems in Scotland, Northern Ireland and Wales differ slightly in terms of funding and control.In total in the United Kingdom there were 3,166 nurseries, 21,427 primary schools, 3,333 secondary schools and 2,378 independent schools in 2009/10.[1]

Education Ecosystems – UK Schools (England)



Source: GSMA

1 *Education and Training Statistics*, DfE, 2010

The main characteristics of the school system are:

- Highly decentralised state (public) school system.
- Funds are allocated to schools by Local Authorities, which also purchase and deliver some services centrally.
- Schools then have control over their budgets, including spend on technology.
- Small private sector, with just 7% of pupils attending independent schools.
- Trend for autonomy is increasing with the Coalition Governments drive to establish more Academies, which have much greater freedom than schools tied to Local Authorities. These schools are able to source funding and support from sponsors, including commercial companies.
- Assessment system in UK is based on national benchmarking assessments at the Key Stages and then by high stakes examinations set by awarding bodies. The format, content and timing of these tests and examinations sets the context for most teaching in schools.
- Teaching and learning style in schools focuses on individual needs and learning styles and building skills, as well as traditional subject learning, Schools and teachers have significant freedom to adapt and innovate within the classroom, although this is balanced with the demands of the national curriculum.
- Deficit reduction policies mean budgets are squeezed and investment plans put on hold.

4.1 Technology

UK schools are relatively well equipped with IT equipment following a decade of policy drives and investment in technology infrastructure and digital resources. There is a wide range of e-Education activity occurring at all levels, ranging from small scale innovative pilots, to the linking of all schools in London to an ultrafast broadband network. The use of learning platforms is widespread, whilst most classrooms are equipped with interactive whiteboards and there are good ratios of desktop PCs to learners.

A strong and flexible commercial sector has emerged with some large education companies such as Pearson and RM leading the way. Other major technology companies such as Sony, Apple and Microsoft are keen to be part e-Education in the UK.

However, centrally supported technology policy has suffered under the current Government's cuts. Critically, BECTA, the Government agency for ICT in schools, has been abolished and ICT polices have been side-lined and ring-fenced funding stopped, with the Education Secretary making a clear push for schools themselves to drive further change. This means that the on-going development of e-Education in schools is not completely secure.

ICT budgets are in place - the average budget for IT in 2011 is £12,200 ($18,840) in primary schools and £56,200 ($86,800) in secondary schools – but have gone down 6% and 7%[1] respectively.

1 *Improving efficiency in schools, Df E, January 2011; BECTA, Harnessing Technology Survey, 2010 BESA, ICT provision and use in schools, 2010/11, Summary report, September 2011; Review of Education Capital, Sebastian James for DfE, April 2011*

Table: Technology in UK Schools[1]

Aspect	Main points		
Expenditure	■ £487 million ($648.3 million) on ICT equipment and services. ■ Average primary school 2011 ICT budget £12,200 (down 6%). ■ Average secondary school 2011 ICT budget £56,200 (down 7%).		
Policy	■ No central government policy for technology in schools (Under previous Government Harnessing Technology policy included £639 million ($850.6 million) grant for 2008-2011). ■ BECTA – government agency with responsibility for driving technology in school abolished in 2010. Functions in the process of being passed back to DfE and other bodies.		
Procurement	■ Local Authorities carry out some central purchasing on behalf of schools. ■ Majority of ICT spend stems directly from schools. ■ Head-teachers more likely to make buying decision in primary schools, ICT co-ordinators/managers in secondary schools.		
Penetration		**Primary schools**	**Secondary schools**
	Desktops per school	30.8	238.7
	Laptops per school		86
	Wireless networks	75%	92%
	Average bandwidth	9Mbps	31Mbps
	Interactive whiteboards	100%	84%
	Learning platforms	67%	93%

1 *Improving efficiency in schools*, Df E, January 2011; BECTA, *Harnessing Technology Survey*, 2010 BESA, *ICT provision and use in schools*, 2010/11, *Summary report*, September 2011; *Review of Education Capital*, Sebastian James for DfE, April 2011

4.2 Mobile Education

Mobile Education in UK schools is characterised by a pockets of exciting and innovative activity and a number of parties interested in pushing the agenda further. The use of laptops, netbooks and tablets on a 1:1 basis is increasing and the benefits of Mobile Education are becoming clearer, but it is yet to be fully embraced.

Most projects in schools are small scale and are led by an enthusiastic set of teachers backed by some research funding. However there are examples of whole schools embracing Mobile Education, such as the Cedars School of Excellence which have issued all pupils with an iPads and over 1000 learners in Essa Academy in Bolton who have an iPod Touch. These however, are still rare and are newsworthy enough to make national headlines. Other projects are Local Authority led such as Wolverhampton's Learning2Go project and Worcestershire County Council and London Grid for Learning (LgFL) using iTunes-U to disseminate information and learning resources.

Suspicion of mobile phones in the classroom is still a the major hurdle for many teachers, who have yet to move away from the view that they are disruptive, towards seeing the potential for teaching and learning. Only last year, much pressed for legislation was introduced that enabled teachers to confiscate mobiles and other devices if they were disrupting classes, and more recently, the Education Secretary has explicitly called for a ban on mobile phones in schools.

There are signs of opinion changing - Mick Brookes, who is general secretary of one of the biggest teaching unions, the National Association of Head Teachers, went on record in October last year as saying schools should embrace the opportunities that mobile phones can offer.

Further evidence about willingness to adopt technologies is provided in BESA's report Impact of New Technologies in English Maintained Schools, 2011. This asked for views about perceived usefulness of technology alongside actual current use and envisaged use by 2012. The survey showed that both netbooks and tablets are generally considered to have more use than smartphones. Given that smartphones are much more readily available and already in use in the general population, it is surprising that they are not being made more use of.

Of course, the ability to connect these devices depends on connectivity to wireless networks. BESA research suggests that 75% of primary and 92% of secondary schools have wireless networks, but in secondary schools the demand is actually for more than twice the current available bandwidth (68Mbps) to meet current needs.

Table: Proportion of Schools with Pupils Using New Technologies

		Netbooks	Tablets	Smartphones (Pupils Own)
Consider Very Useful	Primary	29%	20%	7%
	Secondary	24%	25%	17%
Currently Use Some/Extensively	Primary	7%	2%	1%
	Secondary	5%	1%	3%
Plan to Use Some/Extensively by 2012	Primary	18%	4%	2%
	Secondary	4%	7%	10%

Impact of New Technologies in English Maintained Schools, 2011, BESA

4.3 Ownership of Mobile Devices

Estimates vary considerably for the rates of computer and mobile device ownership amongst school children, however most sources agree that penetration is growing rapidly with each year, and devices in school bags are increasingly sophisticated. The most recent survey, published by Halifax and released in March 2011, showed that 94% of children aged 12-15 owned a mobile phone, compared to 66% of 8-11 year olds. 71% of all children own an iPod or MP3 player, while 95% of boys and 87% of girls have a games console.[1]

A more detailed analysis from a web survey in August 2010 found that 77% of 11-16 year olds owned a mobile phone, and 18% owned a smartphone.

Technology Ownership Amongst Children in the UK[2]

Product	5-7 Year Olds	7-11 Year Olds	11-16 Year Olds	All School Children
Mobile Phone	12%	47%	77%	52%
Smartphone	3%	5%	18%	11%
MP3 Player	20%	44%	63%	48%
Laptop	13%	30%	50%	35%
PC	14%	20%	29%	23%
Tablet PC	2%	4%	4%	3%
Netbook	4%	7%	8%	7%
e-Reader	1%	3%	3%	3%
Webcam	6%	12%	29%	19%
Digital Camera	22%	34%	42%	35%
Games Console	44%	59%	68%	58%
My Child Won't Own Any	24%	9%	2%	9%

1 Savings *Keeping up with The Jones*, Halifax 4 March 2011
2 *High Tech Kids cost Adults £537 a year*, Kelkoo, 10th September 2010

4.4 Case Studies

Cedars School of Excellence – iPads

The Cedars Schools of Excellence, an independent school for pupils aged 5-15 in Greenock, Scotland, claims to be the first school in the world to 1:1 deployment of iPads and has been hailed as one of the first "iSchools".

Case Study – Cedars School of Excellence	
Aim	Give students opportunity to have best equipment available.
Scale	105 pupil school.
Description	■ All pupils issued with iPads connected to schools wireless network. ■ Used in every lesson, and children do their homework on it. ■ School did not dictate many specific uses for the device, preferring to leave it to classroom teachers to identify the places where the device will be useful for each subject's unique requirements.
Partners	N/A.
Funding/Business Model	Three year rolling lease, £14.50 ($19.30) per month per pupil. Total cost of £45,000 ($60,000).
Technologies	16GB WiFi iPads.
Impact on Learning	■ Student engagement vastly improved. ■ Still assessing impact on attainment. ■ Encourages collaboration. ■ Provides a 'safety net' and thus inspires confidence. ■ Broadens access to teaching resources.
Lessons Learned	■ Adhering to Apple's terms and conditions, in terms of syncing desktops and iPad devices was complicated. ■ Pupils still have to switch to writing for exams – ■ Need clear guidelines for 'responsible use'.
Sustainability	Technology fully embedded and embraced.

Learning2go

Learning2Go was a large collaborative mobile learning project for pupils in the UK. It began in 2003, with the distribution of 120 devices in four primary and secondary schools. Alongside this was the roll out of filtered 3G mobile broadband service and the development of a system to enable inter-operability between the mobile devices, a central learning platform and thereby, the school's local area network. This investment in infrastructure was noted as key to the technical success for projects going forward.

Case Study – Learning2go	
Aim	Use mobile handheld computers to engage learners by delivering multimedia content, internet and authoring tools directly to "the palm of a learner's hand".
Scale	Over 4,500 devices, in up to 34 schools.
Description	■ Local Authority led project took place over four phases, starting in 2003 with 120 devices. ■ Phases gradually introduced different devices and operating systems into classrooms. ■ Final phase in 2008/09 was part of the MoLeNET programme and extended provision to FE colleges and learners in the workplace. ■ Students were given the devices for 2 years with 24/7 access, they were able to choose when to access the device for learning. ■ Each teacher and school was given the freedom to choose how to use the devices for learning. ■ Projects include – use of smartphone to track Harlequin ladybirds.
Partners	e-services team Wolverhampton City Council, Wolverhampton College, local schools, O2 and devices suppliers.
Funding/Business Model	■ Devices jointly funded by schools and parents over a 2 year period. ■ Content funded via e-Learning credits. ■ Wireless infrastructure funded by school.
Technologies	■ Range of devices including PDAs, smartphones and Sony PSPs. Latest issued include HP iPAQ Acer F900, HTC Touch Diamond, Intel Fizzbook. ■ Filtered mobile broadband solution.
Impact on Learning	■ Positive engagement and motivation and in some cases raised self-esteem. ■ Improved achievement, hard evidence that attainment and progress was improved. ■ Viral effect as teachers previously reluctant become interested.
Lessons Learned	■ Integration of devices with wider schools system difficult. Windows Mobile not consistent with full size operating system. ■ Learner Voice was a key to success. ■ Device selection vital - needs to cover the majority of ICT needs. ■ Teachers are gatekeepers and need to on board, trained and confident. ■ Need to understand that hand held devices are not 'smaller' laptops or PCs and examine specifications closely. ■ Need to purchase resources that are mobile specific, rather than relying on resources designed for other devices.
Sustainability	The project has completed.

Yewlands Technology College – Interactive Learning Technologies Project

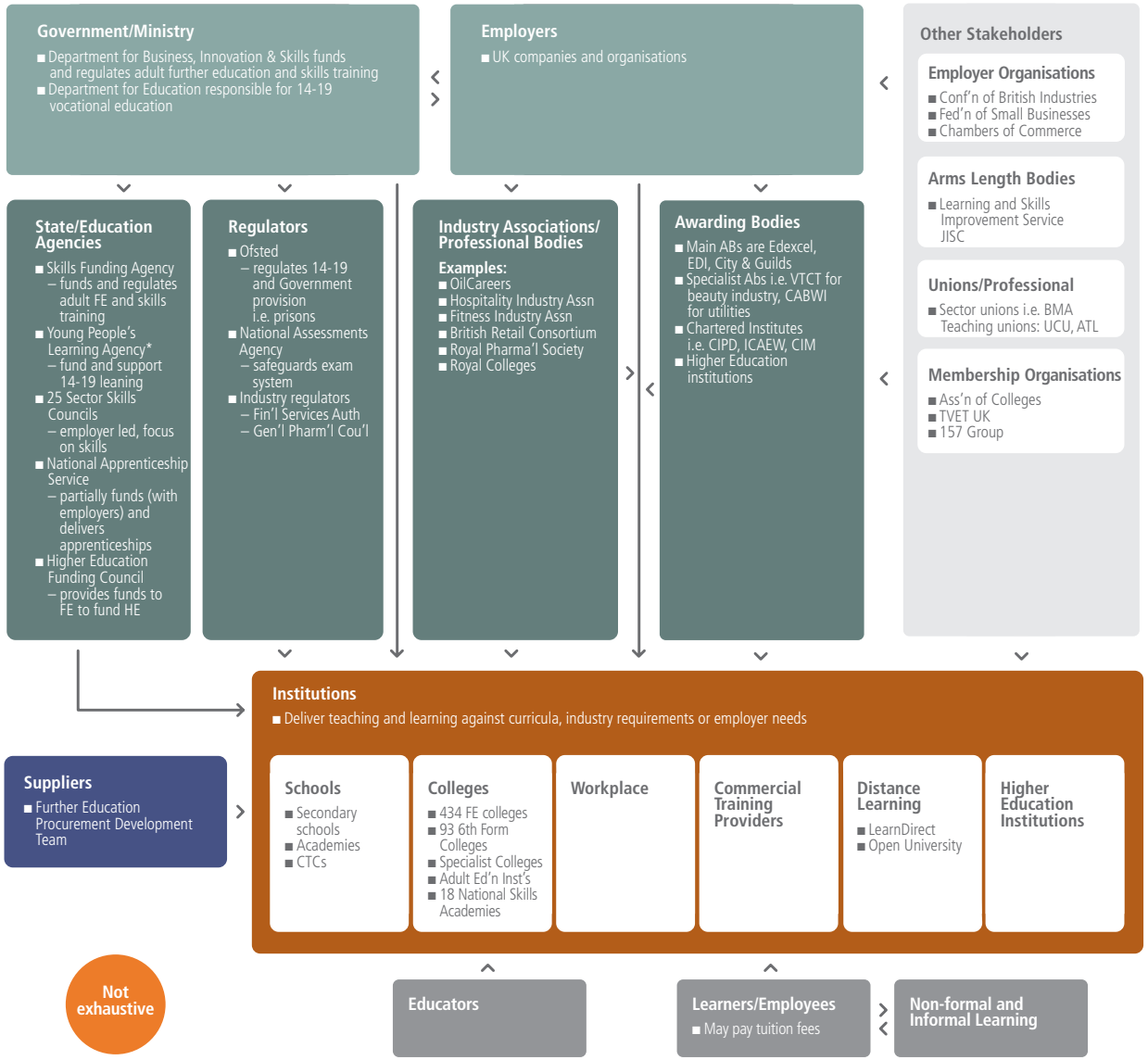
Yewlands is a recently rebuilt secondary school in a disadvantaged area of Sheffield, which reopened in September 2009. As part of the relaunch, the school committed to use new technologies to support teaching and learning. This has focused on investigating technologies that are familiar to students in their off-campus experience (i.e. phones and games consoles).

Case Study – Yewlands Interactive Technology Project	
Aim	To encourage and engage learners.
Scale	One school, unknown number of students.
Description	■ Number of small scale projects using gaming technologies such as: – Year 7 English learners used PSPs in a variety of ways including capturing and analysing 'Autobiography' project interviews and as an aid to authoring and acting out scripts to improve their stagecraft. – Year 9 learners created videos which demonstrated their understanding of key elements of 'speaking and listening'.
Partners	Sheffield North City Learning Centre (SNCLC).
Funding/Business Model	SNCLC loaned the equipment to the school.
Technologies	PSPs and Wiis.
Impact on Learning	■ Improvements in attendance and behaviour (often amongst challenging cohorts). ■ Contributed towards improved attainment. ■ Devices are familiar, have kudos, robust and reliable – making them a valuable tool that required little training. ■ Mobility of devices opened up new learning spaces within the school. ■ Support of the City Learning Centre in terms of technical support, equipment loans and access to experts was beneficial.
Lessons Learned	■ Technical issues such as incompatibility with other devices and networks were inevitable and took time to resolve. ■ Device management was a burden – solvable with more equipment. ■ Teachers are pushing the boundaries of the devices capability, which were not designed specifically for educational purposes.
Sustainability	Tightening of financial position means that next steps for any expansion would include investigating how pupils can use their own devices.

5 Technical and Vocational Education and Training

The UK TVET system consists of a large and complicated set of organisations providing a very wide range of qualifications and courses in a variety of settings. The ecosystem described below shows the formal parts of the system that receive funding and also highlights where it overlaps with the school and higher education segments.

Education Ecosystems – UK Technical and Vocational Education (England)



Source: GSMA

The main characteristics of the TVET system are:

- Large number of stakeholders and education providers including schools, colleges, employers, private providers and higher education institutions making it a crowded, fragmented and complicated system.
- System (as described) covers: education and training of students who have left school and have yet to enter the workforce or higher education; employees who want to further their qualifications via work based learning; and adult education which focuses on improving basic qualifications.
- Further education in the UK TVET system, delivered through schools and colleges, includes both academic and vocational qualifications.
- Large amount of spending, up to about £20 billion ($28 billion), is privately funded through employer contributions.
- Currently in a state of flux with recent reorganisations, abolition of several government agencies and current government review of a proposed simplified funding system. Government focusing on Apprenticeships, with reduction in funding for other training programs in favour of subsidising Apprenticeships.
- UK employees received an average of 6 hours training in 2010. Classroom-based teaching is the dominant method (94%), with 46% incorporating mixed/blended learning. 38% of long distance learning was delivered on a mobile device (e.g. smartphone, iPad).[1]
- Funding cuts of up to 25% in government expenditure on FE means that colleges will be facing tough spending choices.

5.1 Technology

There has been significant progress in terms of delivering e-Education in this sector. The usefulness of technology to improve the teaching and learning for students taking practical and vocational courses have long been recognised, and the use of VLEs and e-Portfolios are well established in most colleges. The latest survey conducted by BECTA found that 8% of colleges were deemed as 'pioneering' (providers who were transforming learning and teaching with technology) and 27% were 'performing'.

Table: Technology in UK TVET Sector[2]

Aspect	Main Points		
Expenditure	■ Estimated ~ £463 million ($641.3 million) in 2011/12 by FE colleges.		
Policy	■ No central government policy for technology in TVET. Some co-ordination previously supplied by BECTA. ■ Clear devolvement of ICT responsibilities to institutions. ■ 21% of colleges have a whole college IT plan that operates across all departments.		
Procurement	■ Colleges are autonomous in their budgetary responsibility and make IT spending decisions independently.		
Penetration		Further Education Colleges	Work-based Learning Providers
	Learners per computer	4.5	7.2
	Learning platform	92%	36%
	Integrated MIS/LP	35%	n/a
	Remote access for learners	80%	38%
	Online testing and submission of assignments	87%	90%

7 *Cegos European Survey of Learning Trends 2011*, May 2011 Cegos - http://www.slideshare.net/clives/cegos-2011-learning-trends-survey-draft-final-may-11

2 *Harnessing Technology Review 2009, The role of technology in further education and skills*, BECTA ,Jan 2010; *Education ICT in the Public Sector to 2012*, Kable

5.2 Mobile Education

A key enabler of Mobile Education in the TVET segment, and in higher education, is JISC (formerly known as the Joint Information Systems Committee, but now known only as JISC). It sets out to "inspire" UK colleges and universities in the innovative use of digital technologies. Its position on Mobile Education is that *"despite the almost ubiquitous ownership of mobile phones, the adoption of mobile technologies in post-16 teaching practice is still in its infancy."* JISC is currently investigating the potential for mobile technologies and what impact these might have on learning and teaching practice. It has ten programmes in place and is monitoring 36 projects.

Nearly all activity in the FE sector has been linked with the Mobile Learning Network (MoLeNET), which was one of the largest and ambitious mobile learning programmes in the world and involved 147 FE colleges (see case study below). However the practice of using mobile technology to support learning is not yet widely embedded in current practice.

The workplace is a key area of development for Mobile Education. Many industries in the UK are in the process of professionalising, which means introducing more structured continuous professional development and increasing levels of validation and mandated testing, and mobile technologies can play important roles in this. The NHS, one of the largest employers in the UK, has recently developed a set of wide-ranging recommendations and actions that would enable the NHS to take the necessary steps to being 'm-learning ready,' focusing especially on the delivery of statutory and mandatory training and assessment.[1]

5.3 Ownership of Mobile Devices

There is little FE sector specific ownership statistics, but a survey of higher education and FE students conducted by Blackboard found that virtually all students own a mobile phone and a third have smartphone.[2]

More compelling data is from Ofcom. This shows that 99% of people aged between 15 and 24 have a mobile phone, the highest penetration rate for any age group. Ofcom also report that in May 2010, 26% all of mobile phone users claim to have a smartphone and that 64% of all new phones sold are smartphones. However, it was found that only 7% of handsets used by 15-24 years olds were iPhones compared to 20% of 25-44 year olds.[3]

5.4 Case Studies

Lewisham College – Wireless Blended Learning for Workplace Learners

This project provided access to mobile learning for students on hospitality, construction, business and IT courses. These students were typically learning and being assessed in the workplace and only attended college for 2 hours a week.

Case Study – Lewisham College – Wireless Blended Learning for Workplace Learners	
Aim	Investigate the impact of the use of mobile devices with groups of learners in different curriculum areas
Description	Students provided with PDAs preloaded with learning content and Mobile Office applications that supported their learning. This enabled them to study at time, place and pace suitable to them. Learners were also able to gather portfolio evidence using their devices
Partners	Lewisham College
Funding/Business Model	MoLeNET funding
Technologies	HTC Touch PDAs
Impact on learning	■ 10% increase in attendance compared with control group ■ Easier to collect evidence of learning for both the staff and students ■ Set of mobile resources were created
Lessons learned	■ Technology should be introduced at beginning of qualification or course ■ Need to ensure Wi-Fi connectivity where needed ■ Developing resources is time consuming ■ Time needed to train both staff and students was significant ■ Need to involve employers early in the cycle - concerns about taking care of devices and allowing learners to use it while at work led to lack of buy-in ■ LSC would not count learning hours via mobile as 'required' learning hours
Sustainability	Funding ended and no sign of the project continuing

1 *Mobile Learning for the NHS*, NHS South Central, April 2011 http://www.elearningeuropa.info/en/directory/Research-Report%3A-Mobile-Learning-for-the-NHS
2 *Innovation in Education, The Student Experience*, Blackboard, 2010
3 *The Communications Market*, 2010, Ofcom

MoLeNET

The Mobile Learning Network (MoLeNET) is one of the largest mobile learning initiatives in the world, and ran from 2007-2010. It was a collaborative approach which provided a framework for introducing and supporting mobile learning in education and training via supported shared cost projects. The programme consisted of over 100 projects, so while the programme was ambitious the individual activities undertaken were still on a relatively small scale, rarely reaching past one college or one group of learners.

Types of project covered by MoLeNET include:

- **Bridgwater College** – Students were issued with Sony PSPs with cameras and pre-loaded with learning materials. They had to access the materials and produce a video of themselves carrying out specific skills such as soldering a pipe joint, which was transferred to each student's online portfolio wirelessly.
- **Hastings College** – iPod Touch and wireless networks were used to enable learners, who otherwise had little or no access to technology, to access media rich content and learn at a time and place that suited them.

Case Study – MoLeNET	
Aim	Encourage and support the use of handheld technologies to enhance and extend the reach of teaching and learning in post-14 education and training.
Scale	104 projects involving 147 Colleges, 37 Schools, 40,000 learners and over 7,000 staff.
Description	Wide range of projects (examples listed above.
Partners	■ Project consortia led by Further Education colleges. Also included wide range of stakeholders including schools, universities, training providers LAs, employers, children's services and development agencies. ■ Learning and Skills Council (now SFA) provided capital funding. ■ Learning and Skills Network provided a support and evaluation programme.
Funding/Business Model	■ £16+ million ($21.3 million) over three phases. ■ Funded research where bids included 20% 'match funding'. ■ Bidders had to guarantee to 'buy back' the LSN evaluation and support.
Technologies	Wide range, including: smartphones, iPods, iPhones, netbooks, games consoles, digital recorders, digital cameras.
Impact on Learning	Wide ranging impact. Main benefits include increased or improved learner motivation, engagement, behaviour, retention and achievement. Overall achievement rate was 13.4% higher than the national figures for all FE sector colleges in 2007/08.
Lessons Learned	■ Success of the projects was underpinned by the surrounding support network provided by LSN. ■ Careful planning required, particularly once any scale is involved. ■ Staff training, support and time to experiment and plan critical. ■ Differentiated approach tailored to individuals rather than a one-size fits all strategy will maximise the benefits of mobile learning. ■ Production of learning material is time consuming and will take time for teaching staff to learn. ■ Advantages not fully realised if just change format of learning materials. Need to start with learning objective and establish how mobile technologies can enhance delivery. ■ Need to ensure awarding bodies will accept summative assessment materials collected by mobile technologies. ■ Although some short term benefits, many MoLeNET practitioners believe the full benefits of mobile learning will take more than one academic year to emerge.
Sustainability	■ All funding now finished. Although many of the individual projects will continue in individual colleges, there is little co-ordination. ■ Eight pioneering colleges have been chosen to be MoLeNET Academies. Each Academy will become a centre of excellence for mobile learning staff development and will provide training facilities to develop the mobile learning skills of teaching and support staff in their area. They will also encourage other local providers to utilise mobile technologies in learning. The first MoLeNET Academy opened at Northampton College on 12th February, 2010.

- **Pembrokeshire College** – Using PDAs to engage and improve communications with young people who were previously not in employment education or training (NEET). SMS communication enabled teachers to stay in touch with this difficult to reach group.
- **City of Southampton College** – Enabling location based learning for ESOL (English for Speakers of Other Languages) who used SMS to post images to answer questions when out visiting locations with the city.
- **Lakes College West Cumbria** – Using iPod nanos to pose multiple choice revision quizzes for construction students, many of whom were struggling with paper-based processes.
- **New College, Swindon** – Allowing lecturers to make audio and video podcasts to play on PDAs or MP3 players to help revision or give extra support to students.
- **Stockport College** – Providing step by step guides to hairdressing techniques for styling, cutting and colouring for 500 students.

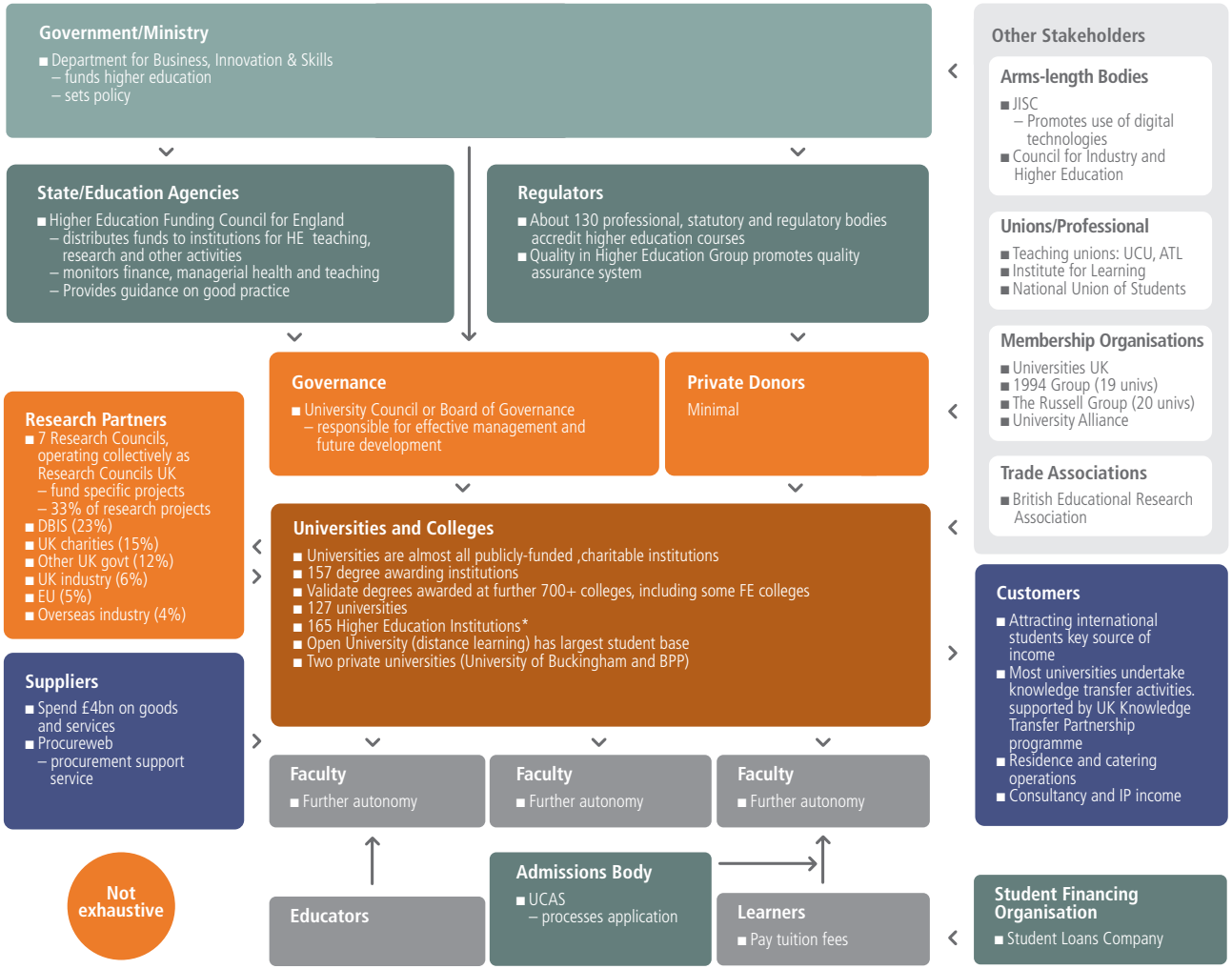
Sheffield College has been involved in two phases of MoLeNET, and the success of these has led to it being designated as a MoLeNET Academy. The first phase was about expanding the use of mobile learning in Sheffield College, with the follow up focusing on disseminating this knowledge to the surrounding schools.

Case Study – MoLeNET at Sheffield College	
Aim	■ Enhance personalised active learning, leading to improvements in retention and achievement. ■ Improve the efficiency of learner assessment, addressing the challenges of sharply increasing numbers of work-based learners. ■ Widen participation. ■ Develop capacity. ■ Approach mobile learning in a highly innovative way, directly asking learners how they want to use the technology to learn.
Scale	Almost 3000 learners and 350 staff.
Description	■ Many small micro pilots, involving wider range of devices. For example: – Construction students used digital head cameras to gather practical evidence of their work for their portfolio. – Hairdressing students have used smartphones to internet search for hairstyles. – Maths students have been testing an arithmetic training programme on games consoles.
Partners	Sheffield College and six local schools.
Funding/Business Model	MoLeNET 2 - £300,000 capital funding. MoLeNET 4 - £237,500 capital funding to lead a Sheffield based, collaborative bid in 2009/10. MoLeNET Academy - £40,000 for CPD. College made a contribution of 20%.
Technologies	Smartphones, Nintendo DS, cameras, Notebook PCs, Digital pens.
Impact on Learning	■ 78% of students thought device helped them learn. ■ 55% felt it improved their marks. ■ 92% felt it made learning more enjoyable.
Lessons Learned	■ Tight deadlines with no time for training. ■ Teachers were given devices and told they could use them as they wanted – gave creative freedom, and cut down administration. ■ Connectivity was the key – college did not have full Wi-Fi. ■ Issues around safeguarding and e-Safety. ■ Main question was why learners own devices aren't being used, and how can this be addressed. ■ Look to higher education sector for lessons about learners using own devices on institution networks.
Sustainability	No more funding, college will purchase some devices, but move to use learners own devices. Mobile learning is integral part of college strategic plan and their ILT strategy.

6 Higher Education

Again, university education is a devolved issue, and this report focuses on the system in England.

Education Ecosystems – UK Higher Education (England)



Source: GSMA

The higher education system in the UK is a long established and traditionally public funded sector. The vast majority of universities are public institutions – there are only two private universities.

The main characteristics of the higher education system in the UK:

- Largely publicly funded, although increasingly relying on tuition fee revenues from students. Following recent changes, universities will in the future be able to raise their fees, up to £9,000 (U$14,263) a year. (NB no tuition fees for Scottish universities).
- Only two private universities in the UK.
- Universities are independent bodies and have complete budgetary control over their spending decisions. Most institutions devolve responsibility further to colleges, schools or departments, which have the authority to purchase goods and services.
- Universities are having to increasingly compete for students (and their tuition fees); their use of technology to support students both practically and in learning may emerge as a differentiator.
- Funding is under substantial pressure, with public spending cuts hitting the sector hard – university teaching budgets will be cut by 40% by 2014.

6.1 Technology

Two years ago, Professor Sir Ron Cooke's report on on-line innovation in higher education noted that the UK higher education sector has a world-class ICT infrastructure.[1] It seems it is no longer the case of counting computers in universities but rather examining how they are being used in order to deliver teaching and learning.

In part, this is in response to demand from students, who have increasingly high expectations in terms of IT infrastructure, internet access and the ability to use their own devices to access institution's networks. A recent survey of universities asked about which technologies were starting to make new demands in terms of support required for users and the influence of Web 2.0 was felt to be the most challenging, with mobile technologies ranking second.

Table: Technology in the UK Higher Education Sector[2]

Aspect	Main Points	
Expenditure	■ Estimated ~ £1,094 million ($1,515 million) in 2011/12 by universities	
Policy	■ JISC is an internationally respected government agency responsible for helping universities implement technology. JISC have full strategy in place and fund many action research projects aimed at embedding e-Education practices. ■ HEFCE e-Strategy, Enhanced teaching and learning through the use of technology, aims to reflect how technology can help institutions achieve some of their key strategic aims. ■ Clear devolvement of ICT responsibilities to institutions.	
Procurement	■ Devolvement of university budgets means flexibility for departments to introduce technology as appropriate. But, can result in lack of integration with the IT strategy of the institution.	
Penetration	Virtual Learning Environments	100%
	– Blackboard Classic (main VLE)	25%
	– Moodle (main VLE)	23%
	Centrally supported technology:	
	– e-Submission	89%
	– e-Assessment	80%
	– e-Portfolio	72%
	– Social networking	33%

1 *On-line innovation in higher education*, Professor Sir Ron Cooke, October 2008
2 2010 *Survey of Technology Enhanced Learning for Higher Education*,UCISA,; Kable, *Education ICT in the Public Sector to 2012*

6.2 Mobile Education

Mobile phones are being used in some universities to access the Virtual Learning Environment (VLE) systems and to send/receive administrative communication. A survey by Blackboard revealed that only 14% of FE and HE students are provided with services delivered to their mobile devices through an online learning environment customised for a mobile phone. As fees rise and students work long hours to support themselves, mobile learning facilities are likely to become an increasingly important factor when considering at which institution to study.

Blackboard also found that the majority of students would like to receive updates from their institution via text or voice message, yet just 8% currently do so. Again, as students become increasingly mobile, it is likely institutions will have to adapt to accommodate this demand.

These limited uses of mobile devices are a long way from use in teaching and learning. JISC recognises that *"the availability of more powerful and affordable mobile technologies and devices such as the iPhone, Blackberry etc., offers considerable potential to improve the educational offering to students (however) despite the almost ubiquitous ownership of mobile phones, the adoption of mobile technologies in post-16 teaching practice is still in its infancy."*[1]

Sheffield Hallam University was the first university, in July 2010 to install Blackboard's Mobile Central and Mobile Learn; these gave students the ability to access both campus services and course content on smartphones and Web-enabled mobile devices. Since then Manchester and Liverpool Universities have also subscribed to these services. Other universities such as Oxford (see case study) and Lincoln are designing their own mobile application so that students can access the central VLE, find local information and complete certain day to day tasks.

JISC is very active in investigating the potential impact of mobile technologies teaching and learning through many of their programmes and projects. Ten programmes are listed under Mobile Learning activities, although these actually seem to be part of a wider research brief rather than focusing exclusively on mobile technologies. JISC also recognises that the move to mobile presents technical issues such as sophisticated access and identity management tools, as well as appropriately designed applications. As a result, they are committed to ensuring that JANET offers delivery mechanisms to new mobile technologies.

Ownership of Mobile Devices by Students

Results of polls taken by individual universities suggest that mobile phone ownership is almost ubiquitous amongst students, and a significant proportion own a smartphone:[2]

- University of Edinburgh – survey of ~2,000, 49% had smartphones (Apple 35%, Nokia 25% and Blackberry 17%).
- Trinity College Dublin – survey of ~2,250, 40% had internet enable phones.
- Kent University – survey of 270, 78% had wireless access, 68% collected email via phone.

1 *JISC Strategy 2010-2012*
2 *The Rise and Development of the Smartphone,* OMbeil, June 2010 http://www.ombiel.com/downloads/oMbiel_Whitepaper.pdf

6.3 Case Studies

ALPS: Mobile Technologies Project

The ALPS (Assessment and Learning in Practice Settings) project team saw the potential value of mobile learning for health and social care students on practical placements. It recognised that students need access to their university's learning systems in a flexible way to enable them to work effectively and efficiently with all of the information they need.[1]

Case Study - ALPS: Mobile Technologies Project	
Aim	Aim was to implement innovative new method of mobile learning and assessment.
Scale	1000+ health and social care students in 5 universities.
Description	■ Initially, series of pilots with students and staff at each of the five HEI partners aimed at exploring feasibility and identifying readiness to adopt mobile technologies. ■ Using the outcomes from the pilots, ALPS developed a specification and architecture for the provision of mobile technology support for assessment and learning and tendered for the provision of devices, networks, a mobile services platform to support the devices and an assessment platform. ■ Students were ultimately presented with a mobile device through which they could access learning materials, submit assessments, communicate with tutors and access their universities VLE.
Partners	T-mobile; MyKnowledgeMap (online learning systems provider); ecommnet (mobile software specialist); Universities of Leeds, Leeds Metropolitan, Bradford, Huddersfield and York St John.
Funding/Business Model	■ Originally funded by HEFCE under Centre of Excellence in Teaching and Learning programme - £2.5 million ($3.3 million) revenue and £2+ million ($2.7 million) capital. ■ Further £1.5+ million ($2 million) contribution from the Universities. ■ Since September 2010, funded by the NHS Yorkshire and Humber and the ALPS Partners. ■ T-mobile offered fixed monthly prices for unlimited mobile broadband.
Technologies	T-Mobile MDA Vario (PDA style device with mobile broadband access).
Impact on Learning	■ Accurate and timely assessments during placements, with results directly connected into to central University's VLE. ■ Enhanced learning methods – mobile resources, live blog, mobile e-Portfolios.
Lessons Learned	■ Ergonomics of the device important to the acceptability. ■ Training and support key to a successful introduction of the devices to staff and students. ■ Regulatory/professional/awarding bodies need to 'signed up'. ■ Mobile solutions need to be part of wider ICT infrastructure.
Sustainability	Project is embedded with plans to add more e-Learning materials, and roll out to all health and social care students in West Yorkshire over next three years. No plans to upgrade the device.

1 *Assessment and learning in Practice Setting (ALPS) – Implementing a large scale mobile learning programme:* A Report, July 2010
2 *Exploring the Use of Mobile Learning in Medical and Healthcare Education*, St George's, University of London, 2010

Oxford University – Mobile Oxford (M.Ox)

This is a mobile app created by Oxford University and was one of the first mobile information services in UK higher education. It provides some general location based services to students to help with day to day tasks and connects with the University's central VLE. The app is based on open source code available through the Molly Project.

Case Study - Mobile Oxford (M.Ox)	
Aim	Provide a range of powerful and intuitive mobile information services, as a 'one stop information shop,' to the staff, students and the public.
Scale	Million visitors in first year.
Description	■ Currently features: – Location-sensitive library searching (find the nearest copy of a book). – Points of interest and mapping across Oxford City. – Real-time transport information including live bus arrival times. – Aggregated news feeds. – Access to the University's virtual learning environment. – Full access to the University's iTunes U podcast catalogue. – Oxford and traffic WebCams.
Partners	Oxford University Computing Services, The Molly Project.
Funding/Business Model	Originally funded by JISC - £250,000. Freely available.
Technologies	Mobile application designed for any mobile device.
Impact on Learning	■ Convenience of mobile communications. ■ Merges university technology infrastructure with external information resources.
Lessons Learned	■ Technical issues surrounding designing and optimising an app for multiple devices.
Sustainability	■ Development has been innovative and remains on-going. ■ Has led to an open source community project for other groups who wish to implement it.

University of Wolverhampton – Mobiles Enhancing Learning and Support

This project set out to investigate the issues in an institution wide implementation of SMS-based technology to support teaching and learning activities in the University of Wolverhampton.

Case Study – University of Wolverhampton Mobiles Enhancing Learning and Support	
Aim	Create and explore the value of SMS for learning and teaching.
Scale	27 staff, interacting with 938 students, with total of 11,522 SMS sent.
Description	■ Used three types of SMS: – One way (staff -> learner) communication (up to 800 characters). – Formative assessment (true/false, multiple choice quizzes and free response). – Collaborative learning (text conferencing with replies to all students).
Partners	University of Wolverhampton, JISC, Pebble Learning.
Funding/ Business Model	JISC funded.
Technologies	Bespoke solution.
Impact on Learning	■ Universities and their students benefit from institutional wide use of communication via SMS. ■ Use of SMS for specifically learning and teaching activity shows great promise, but needs further use and investigation. ■ Unable to measure any impact on retention or progression.
Lessons Learned	■ Staff require training on the technology and how to use it to teach. ■ More work required on understanding how SMS can be used for teaching. ■ Developing teaching and learning SMS software time consuming.
Sustainability	University is taking it forward and implementing an institution wide system for administration use.

Mobile Moodle

Following a survey of over 700 medical and healthcare students, St Georges University in London found that most students owned a smartphone and that over 50% were already using them for mobile education – they were downloading over 1000 academic podcasts a week, and had visited over 1500 dedicated mobile education sites each month. The University then decided to create a Mobile Moodle so that students could connect via their mobile to the University's Moodle VLE. This takes the form of a mobile browser rather than an application. The browser is able to access all core Moodle functions such as Lessons, Quizzes, Assignments, and Resources.[2]

7 Market for Mobile Education

Mobile Education in the UK is currently a small market which is primarily manifest through a large number of temporary initiatives. There are many types of activities including small pilots of mobile devices being run by individual teachers, large action research programmes such as MoLeNET, implementation of whole school 1:1 devices strategies and the increasing use of native mobile interfaces developed by leading companies, such as Blackboard's Mobile Learn.

This view of Mobile Education was confirmed in a report to JISC, which found *"the current state of mobile learning in the UK as consisting of considerable numbers of small scale trials and pilots taking place over fixed periods of time."*[1]

7.1 Mobile Education Ecosystem

There is an emerging commercial sector, but this is currently quite fragmented. A few major international players, such as Pearson, Sony and Apple, see the potential in the UK market, while a few smaller and nimbler companies are developing specific platforms and software and partnering with institutions to make solutions that fit existing infrastructure.

In the UK, Sony are targeting the school sector, supporting the increasing penetration of their devices with product developments and classroom-oriented projects, as well as high profile contributions to the very vibrant debate on the use of technology, especially devices, in the classroom. They were one of the earliest sponsors of an Academy in 2004 (Paddington Academy) and engage ConnectED in 2006 to conduct trials of PSPs in schools in 2006 and act as a distributor. They were also key players in the UK Government's Education Technology Taskforce, which met once in 2010 and was then disbanded, but remain committed to driving change across the education sector.

Ray Maguire, MD Sony Computer Entertainment, has called for a co-ordinated initiative between education and industry, supported by the Government. This would include:

- Integrating games and interactive media into the curriculum.
- Promoting digital content creation as a career choice.
- Using consumer funded devices to bring content into the classroom and home.
- Bringing textbooks to life with rich media (i.e. Second Sight).
- Tapping into new technology trends, i.e. augmented reality, user-generated content, 3D.

In part, Sony's interest is as an employer, seeing a serious shortage emerging in the skills they require. For Sony, the key factor for success in such an effort is a professional project team, as they have observed that many projects 'splinter off' because they lack professionalism.

Examples of native commercial products in UK education market include:

- **CampusM** – This is an application, from oMbiel, for universities to offer branded mobile services to students. It is currently used by Coventry University, and Manchester Metropolitan University (MMU). Content includes information about their university, up and coming events, campus maps and directions, library records, timetables, contacts, latest news and alerts. It can be used on most smartphones including iPhones, BlackBerry, HTC and Sony Ericsson. In partnership with University of London Computer Centre (ULCC), OMbiel are working to integrate core elements of Moodle in CampusM, so that it can be used to access a university's VLE systems.

1 *Identifying Emerging Issues in Mobile Learning in Higher and Further Education: A report to JISC,* by Jocelyn Wishart and David Green, 2010

- **RM Slate** – A tablet PC designed by RM for the education sector. It runs Windows 7, 11.6 inch touchscreen, Bluetooth and Wi-Fi, handwriting recognition, webcam and camera. It has been designed exclusively for school use and is housed in a strong magnesium alloy case with rubberised grip finish, and costs £399. It was launched at the end of 2010, so is yet to make any real market impact.
- **I am Learning GCSE Maths App** – This is a revision app from I am Learning that has over 2500 unique questions across the GCSE Maths curriculum. Choose to play the game or use the default template to revise, it includes tests.

There is also a buzz of activity around teachers, lecturers and in some cases, learners creating their own resources, which should not be overlooked.

In the UK, there is also an important set of stakeholders which have and will play an important role as 'enablers' of Mobile Education. These include; think-tanks, such as FutureLab and NfER, which lead some of the more progressives trials and research; the annual technology tradeshow, BETT, which is a crucial showcase and discussion ground for developing technologies; and initiatives such as MoLeNET and m-Learn which have very actively shifted the ground towards acceptance of Mobile Education.

7.2 Market Potential

There are many reasons why the market for Mobile Education in the UK shows significant potential.

The UK has relatively solid IT infrastructure in schools, colleges and universities, well-established IT and e-Education practices, and broad acceptance that using technology can enhance teaching and learning. This can be a hurdle to widespread adoption of a new approach, especially when budgets are tight, but also lays the ground for acceptance and perhaps demand for new technology developments.

As is the case in most countries, the ubiquity and potential of mobile devices is also driving demand from users. The vast majority of college and university students have their own mobile devices and expect to use them, yet only 14% of institutions provided any information or online learning environment customised for a mobile phone.[1]

Critically in the UK, institutions have control of IT budgets, which are established and in place, and responsibility for their own IT policy. With the shift to Academies and Free Schools making schools becoming more autonomous, and both schools and universities increasingly needing to attract learners, technology has the potential to be an important differentiator.

MoLeNET, and a handful of other projects that have gone on to become adopted within an institution, has shown that institutions generally accept that they need to commit to investment and embed mobile technologies into their mainstream technology strategies. Of 60 institutions that were part of MoLeNET, 80% said that they plan to use their own budgets to fund further mobile learning in the future. 62% of projects reported that they had already invested some of their institutions own budget to upgrade wireless networks and 71% reported purchasing additional mobile technologies.

However, in times of economic restraint and budget cuts, there are many schools and colleges who are putting new technology projects on hold. For example, Davison CE High School Worthing were planning to give all year 9 pupils iPads to use across the curriculum, however recent funding cuts have meant the project is mothballed.

Finally, research and trials are leading to more and more commentary about the benefits of Mobile Education. The experience of MoLeNET colleges and schools is that mobile learning has played a major role in motivating, engaging and reengaging learners, especially hard-to-reach/teach learners. Some initiatives are also able to point to improvements in attainment. Again, MoLeNET found that attainment rose by over 13% on average.

1 *Innovation in Education, The Student Experience, Blackboard, 2010*

8 Appendix

8.1 Exchange Rates

In this report, all values are given in national currencies, with corresponding figures in US$. The exchange rates used are sourced from the OECD and are as follows:

Table: Exchange Rates – National Currency Per US$

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
C	1.09	1.12	1.06	0.89	0.80	0.80	0.80	0.73	0.68	0.72	0.75	0.72	0.72
£	0.66	0.69	0.67	0.61	0.55	0.55	0.54	0.50	0.55	0.64	0.65	0.63	0.63
Yen	107.83	121.48	125.25	115.94	108.15	110.10	116.35	117.76	103.39	93.57	87.51	81.39	81.39

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