MEETING INDIA'S EDUCATION CHALLENGES THROUGH E-LEARNING



Supporting Business Success





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Introduction

India is a young country on the move. More than half of the country's population is under 25 years of age and every year 10 million people join the workforce. Despite these encouraging numbers, by 2022 the country faces a potential shortage of 250 million skilled workers across a variety of sectors. More alarmingly only one out of every four graduates with a university degree is currently considered employable in the formal sector. ¹India's skills and education challenge is therefore both a quantitative and qualitative one.

India already has one of the largest education systems in the world. The country has 1.4 million schools, 35,500 colleges, and 600 universities. Yet the lack of employable graduates points to the inadequacy of the current educational infrastructure. E-learning clearly has a role to play in resolving the problem. The sector is expected to grow rapidly at a CAGR of 17.4 per cent between 2013 and 2018. ²To put things in perspective the market in India is predicted to grow more than twice as fast as the global average of 7.9 per cent.³

India's education sector is being revolutionised by rapid increases in Internet penetration and the availability of low-cost mobile devices. Technology has the potential to multiply reach. Realising this opportunity many foreign and domestic training providers already offer online education opportunities in the country. Yet efforts are still fragmented and many of the more advanced innovations in online education technology remain the remit of private enterprises.

In an effort to bring rural India in to the digital age Prime Minister Modi's administration has launched the Digital India campaign. Some of this campaign's targets include providing broadband connectivity to a quarter of a million rural villages by 2019 and making wi-fi connections available in schools.

This paper looks at online education and the global and local advances in technology and seeks to identify potential areas for UK-India collaboration in this sector.





Contextualising E-learning – Change is happening everywhere

To understand the potential for e-learning it is important to consider broader trends transforming business and education globally and the advances in technology driving this change. E-learning itself has evolved considerably and some of the trends are explained in the sections below.

A changing corporate landscape

Businesses, the greatest consumers of talent, increasingly have to adapt to rapidly changing conditions in order to remain competitive. City & Guilds Kineo, a consultancy that advises companies on workplace learning,⁴ surveyed 29 organisations on their learning and development needs. The survey highlights transformation being driven by:

- Evolving technologies
- Budget constraints
- A globalising workforce
- Tighter regulations
- Competition for talent

These exert great pressure on businesses as well as on skills and education providers and regulators.

Procurers and providers need to demonstrate value for money and a clear return on investment. As one of the respondents in the City & Guilds Kineo survey stated:

"There is money for training, but it has to show that it improves sales or performance. If it doesn't it's not considered important"

In an environment where resources are continuously stretched this focus on Rol is increasingly present among businesses, learners and public service.



Rapidly evolving technologies

Technological advances are affecting the way we learn and work and disrupting the education sector globally:

• **Big data** allows for greater customisation of learning solutions, in the way that Amazon tailors its products to consumers' needs. This opens up endless possibilities for education providers

• **Cloud computing** will provide greater power in terms of storage, sharing, and the ability to access data from any mobile device

• The **Internet of Things**, or the interconnection between computing devices, is expected to evolve to provide connectivity beyond computers. It will encompass every day objects such as washers and dryers, medical devices, wearable technology, and smart grids. This space is quickly evolving and the American information technology research and advisory firm Gartner estimates that more than **26bn objects** will be connected to the Internet by 2020. This is far higher than the estimated **7.3bn** smartphones and PCs expected to be in use by then.⁵ This poses interesting possibilities for education as it requires the sector to rapidly adapt.

An evolving landscape in e-learning quality not (just) quantity

At the Online Educa Berlin 2014 conference⁶ educational technology (edtech) experts highlighted the need to widen e-learning initiatives beyond multiplying access. There is a need to **focus on quality** to ensure that online education actually produces good academic results. Quality rather than quantity is a more pressing concern and this is the message that is increasingly being communicated to governments and decision makers in the education sector.

"Our problem is that the German governments in many states have discovered e-learning as a means to process more students in a shorter time. It is a fight to explain that e-learning is not a tool for that" – Jeannette Schmid, Goethe University Frankfurt am Main

Providing quality education to a growing number of students means **more teachers** need to be trained to maintain adequate levels of personalised student-teacher engagement.

Providers broadly agree that online learning is a useful tool to multiply reach particularly in developing countries where learners would otherwise have no access to education. But there are problems around course completion rates and the quality of the learning itself suggesting a need to rethink strategies in markets such as India. If the needs of employers are to be met in India's expanding economy then quality has to be central to provision.



E-learning forecasted to grow at a CAGR of 17.4% between 2013 and 2018



Massive Online Open Courses: Harvard measures its MOOCs

There is speculation over whether MOOCs could revolutionise education in the way LinkedIn transformed recruitment, Amazon did bookstores, iTunes did music, and AirBnB did travel.

In the US a survey of Harvard's MOOCs registrants from 2012-13 produced some interesting data. Out of 841,687 HarvardX and MITx course registrations it found that:

- 35 per cent of applicants never proceeded past registration
- Only 5 per cent earned certificates of completion
- On average 72 per cent of registrants already had a bachelor's degree or higher
- Only 2.7 percent of registrants had Internet Protocol (IP) or mailing addresses based in 'least-developed' countries

These findings reveal challenges around issues with quality, access for those who need education the most, and sustained student engagement. These findings were consistent with those expressed by experts at Educa Berlin 2014. The HarvardX survey did however consider that MOOC registrants are not students in the conventional sense. Many of them drop in to learn a particular aspect of a course, which explains the high level of dropouts. This is more so since enrolment is free.

The report also concluded that although open, online courses might not exactly salvage higher education these can be a powerful technological tool to rethink and redeploy resources.⁷

"Large scale, 'low-touch' learning platforms will have sectors and niches where they are very useful and others where they are less so... Thoughtful instructors and administrators will take advantage of resources that can be saved by using these technologies and redeploy those resources to places where 'high-touch' matters" ⁸

The issue is not the technology but the education

One of the challenges of e-learning is the assumption that **technology is the single most helpful solution to upscale education.** This is not always the case. The Internet, for instance, has the potential to isolate learners. Meanwhile other types of technology such as tablets are great for consuming information but they have limited capacity for creation.

E-learning should be about what and how it is delivered, not just about the technology.



The prevailing opinion among educators is that **group learning** is essential to a good education and the Internet can be a way of achieving this goal. Howard Rheingold a lecturer at the University of California, Berkeley, and founding editor of peeragogy. org argues that with greater access to open educational resources and inexpensive communication platforms groups of people can learn together, outside as well as in formal institutions.⁹

The number of **online learning communities** is rapidly increasing as their benefits are more widely appreciated.

Live Mocha

US-based Live Mocha is an online language learning community connecting users who wish to speak another language with native speakers and other language learners. It is one of the world's largest online language learning communities and combines traditional teaching methods with e-learning and social media interaction.

Like most social networking sites it is free to use and includes pay-for options to access more value-added services and products to improve language skills. Live Mocha currently has more than 16 million users and 1 million teachers and learning experts.

Consumer technologies such as YouTube, Google, and other social media are further transforming the way we consume information. Learners are very familiar and comfortable with these platforms and have come to expect them of any online learning platform.

In response some companies are already **embedding training programmes in portals and applications that are freely available to learners**. **Salesforce**, the global cloud computing company that provides customer relationship management systems, has made training programmes for new users available on YouTube.



Open University leading on innovation in e-learning

The Open University (OU) is a longstanding provider of learning using innovative technology platforms. Back in the 1960s its first programmes utilised technologies such as radio and television. Today the OU provides open access to learning materials through platforms such as:

• The FutureLearn website

• YouTube with more than 800 videos including clips about student life, current research, and extracts from OU broadcasts and teaching materials

• iTunes U podcasts to listen to on the move

• Open Research Online, the OU's repository and one of the largest university research collections in the UK with more than 15,000 research publications available on the Internet

In addition the OU offers tutorial support for students in a variety of ways including face-to-face interactions through online discussion as well as through email exchanges with tutors.

The launch of FutureLearn in 2013 was an important milestone. This exclusively online platform combines OU content with that of partner universities. This enables learners all over the world to follow and complete courses from top universities and institutions entirely free of cost.

FutureLearn was the first UK-led provider of MOOCs. In less than a year the site passed the one million-course signup milestone.

FutureLearn is now a platform for another innovation in e-learning. It hosts a MOOC jointly produced by Leeds University and Marks & Spencer using real-life case studies of business innovation. This MOOC illustrates a growing trend in applied learning.¹⁰

It's all about value

Pressures around budget are making businesses and education providers refocus their efforts towards value, quality, and rapid return on investment.

There is a growing trend of businesses placing **greater** emphasis on **pre-assessment** of employee needs in order to design and tailor learning for their workforce in a more targeted fashion. This reduces both the time and learning required to achieve the desired results.

Applied learning and education as an active rather than passive experience has also proven to yield better results.



"The reason that we've reached our limit in our ability to get dramatic gains in learning outcomes is because we didn't realise until recently that when you lecture at students, their brain activity slows down to below that of sleeping" – Lisa Lewin, MD of Technology Projects, Pearson ¹¹

The gamification of learning

E-learning will need a more imaginative approach in the future. Market forces and innovations in technology are paving the way for new approaches to delivering education and training through the use of games and apps. **Gamification** shows the benefits of engaging learners. Mobile technologies such as smartphones can be a vehicle to reach highly dispersed groups of learners.

Learning through gaming

Business simulations via apps on a smartphone

A new London-based enterprise called **SmartUp** is venturing into education, tapping into what it calls the 'gamification of activities'. It is already widely used in marketing campaigns to increase customer engagement. Started by the founders of lastminute.com, SmartUp has raised a seed fund of \$1m and is described as a 'BuzzFeed for learning'. It consists of business simulations played on a smartphone and aims to take business education beyond the traditional MBA market to reach wider audiences. It allows educators, start-ups, investors, and corporates to repackage their training content.

The app demonstrates how **learning by doing** is more beneficial for the learner than rote learning from a business textbook.

Learning from mistakes... without the cost

When **McDonald's** prepared to launch a new till system it wanted to give its staff an opportunity to learn in a safe environment without making costly mistakes and frustrating customers.

City & Guilds Kineo worked closely with McDonald's to provide an innovative solution: a till training game. A simulation of the new till system complemented with questions to assess employee knowledge of customer service made training fun, purposeful, and highly engaging.

The game was **popular**. Without being mandatory the till game had 145,000 visits in one year and remains to this date the most popular employee portal page ever launched by McDonald's.

More importantly, the game also proved highly effective. In the real world it reduced till service time and increased the average customer order in UK stores by 15p.¹²

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Contextualising India

India's digital revolution

India is very much a part of the global technology-driven transformation. India's big data market will have grown five-fold between 2012 and 2015.¹³ Key Indian information, communication, and technology (ICT) players such as Infosys, Wipro, TCS, and HCL Technologies are increasingly involved in developing products and services utilising big data, cloud platforms, and data analytics. These companies are also expanding globally to acquire even more capacity in these new areas.

"ICT can make governance easier and effective. Satellite technology can make education and health universal. Geo-informatics can make our national resource management better. This is an age of technology. I understand this because I use modern tools of communication myself (referring to twitter)" – Narendra Modi at Vibrant Gujarat, 2015

Government initiatives meanwhile also have connectivity and ICT at the core of their priorities: the **Digital India** campaign launched in August 2014 sets out ambitious goals backed by an investment of £13bn over the next 5 years to improve Internet connectivity. Digital India aims to reach **250,000 villages in India** and has a projected completion date of 2019.

India will be the world's second largest smartphone market - TIME ¹⁴

Although India has a large number of mobile phone connections, subscribers smartphone ownership remains low: more than 900 million Indians have a mobile subscription but only about 120 million have a smartphone.¹⁴ This makes India the next big hub for smartphone growth. In China the growing popularity of smartphones has spurred a local tech boom. Local phone manufacturers such as Xiaomi are catering to lower-cost segments and providing alternatives to global brands. In India, an even more price-sensitive market than China, experts see a greater likelihood for the emergence of India-made innovations. India's Micromax is predicted to overtake Samsung as the number one smartphone vendor in India within the next six months.¹⁴

Similarly the huge gap in Internet penetration is indicative of the room for growth: although India is the world's third largest world market by Internet users it has only achieved 16 per cent Internet penetration.¹⁵ This number is only bound to increase.

India is the third largest world market by Internet users, behind China and the US. Yet it has only reached 16 per cent Internet penetration, compared with 45 per cent in China, and 84 per cent in the US ¹⁵

More than 900 million

Only 120 million have a smartphone











E-learning and use of education technologies

India is already a thriving market for e-learning. US-based education platform Coursera¹⁶, the largest of three companies developing MOOCs, reported that 2.8 million learners from around the world registered in 2013. Of this 8.8 per cent came from India, second only to the US.¹⁷

Because of India's excellence in IT training many businesses based in the country are already developing e-learning content for markets such as the United States, Australia, the UK, and Europe. Ironically this content is not deployed locally in India mainly because of the lack of infrastructure and adequate technology to support it. India is still a few years behind other markets in terms of technology used in learning.

India is a thriving market for MOOCs: it is the second biggest e-learning market globally after the US ¹⁸

Failed attempts to import technologies to India have led to disillusionment with certain technology-led approaches. It is clear that in some of these attempts the context was not considered carefully enough. For example buying iPads for children or interactive whiteboards for schools in rural areas serve little purpose if they have limited access to electricity.

Technology use should be decided based on the education goals, teaching methodology, and delivery strategy in that order. The questions to answer are: Why are we educating and how are we doing it?

Education technology in challenging environments: solar-powered MP3s

The British Council in partnership with the Department of Basic Education launched the Learn English Audio Project (LEAP) in South Africa in September 2014. LEAP aims to help teachers from under-developed areas in nine African countries to improve their students' listening and speaking skills. The programme uses solar-powered MP3 players loaded with various learning materials ranging from teacher guides, lesson plans, songs, and stories – all aimed at primary school children.

The MP3 players help teachers plan their sessions even when they may not have access to additional materials or resources. The content on the MP3 players has been tailored for the South African curriculum and it is relevant to both pupils and teachers. Because they are solar-powered the MP3 players can be used in remote locations with no access to electricity. More than 2,000 teachers have been trained and 250,000 students have been exposed to these devices at a cost equivalent to $\pounds1$ per student.



What is India looking for in education?

None of India's higher education institutes currently rank in the world's top 100. China has three in the same list.¹⁹

Although not exclusive to India there appears to be a gap between what the market is currently looking for and what is required in order to achieve longer-term outcomes in education.

Over the short-term India hopes to improve quality of **education and make it more widely available**. E-learning is valued for its potential to tackle these challenges, further incentivising the push to continuously put more curriculum online.

It is essential to anticipate where the economy is heading and design education towards that goal. What do government and educators need to nourish? What skills and talent will employers be looking for in the near future?

More than half of India's population is under the age of 25. It has a workforce of 500 million and more than 10 million young people are added to the workforce every year.²⁰

The future economy

With initiatives such as the **Make in India** campaign India has set the tone for the economy for the next 10 years. This shows where the country's priorities are and its ambition to become a global manufacturing hub. The end goal is to see manufacturing contribute 25 per cent to the national GDP by 2022, up from the current 15 per cent. These efforts will shape policymaking of the current administration and possibly beyond.

Employment creation is a pressing matter given that more than 10 million young people are added to the workforce every year.²¹ Beyond manufacturing India's tourism and hospitality industry will be important job creators and, as a result, critical areas for skills development.

For India to become a knowledge economy it will need to move beyond the number of graduates it churns out and train highly qualified technicians, cross-trained in other disciplines such as sales and management.²²

"If our human resource is equipped with skills and technology, we may serve the world in many areas" – Narenda Modi, Vibrant Gujarat, 2015



The UK: An e-learning leader

The UK has abundant e-learning expertise to offer India. **The first computer ever used for education, the BBC Micro, was developed in the UK** back in the 1980s.²³ Government funding for initiatives such as interactive whiteboards have continued to shape education technologies in the decades that followed. The UK has decades of experience in the use of education technologies and online learning. As a result its providers know **what works and what doesn't** when it comes to e-learning.

Expertise in relevant sectors

The UK also enjoys a very strong position in the very industries that India aims to develop: aerospace and defence, automotive, advanced engineering, oil and gas industries, hospitality and tourism, and retail. All these offer great opportunities in the development of skills. This presents an excellent opportunity for e-learning initiatives given that learning and training solutions can be positioned as premium services. Clients, especially in the private sector, keen to compete globally and with funds to invest, tend to be more willing to pay for quality and results.

Online courses currently being offered in India are affordable, at a third of the cost of what students would normally pay on-campus in the UK

UK learning providers must adapt for India

As is the case in other sectors, including on-campus education, UK educators need to adapt to succeed in India. Although the Indian context has already been described there are other factors to consider.

Getting the price right

India faces immediate challenges in education and limited resources available to the sector make India a price-sensitive market. Thrifty government ministries and states are attracted to lower cost propositions and the cost of training in the UK is often seen as too high in the local context.

Indian businesses, both public and private, expect clear Rol and value for their money. Therefore prospective clients will need to be educated on value vs price. They will also need to be supported in the transition towards new e-learning models that re-focus on quality and outcomes. The UK is in a great position to share this knowledge with India but the value proposition needs to be clearly demonstrated.

"Meeting price points in India can be a challenge. Using modern technologies in learning and testing can help bring down costs. NOCN works with developers and employers to develop employer-led qualifications and we use new technologies to assess the skills and knowledge of trainees via internet-based testing" – Graham Hasting-Evans, MD, NOCN, www.nocn.org.uk



Customisation

Providers need to customise content for India. This is a complex undertaking given the country's size and diversity.

Global competitors

Education providers from various countries are aggressively targeting the Indian market and the competition is stiff. For instance, Germany is strong on centres of excellence and education as part of its development agenda. The Australian model is based on government-sponsored assessment programmes. It has gained popularity because the certifications issued are recognised by Australian authorities.

Fragmentation

In addition to this global competition, UK providers often find that countries such as Germany, Australia, or Switzerland are able to gain traction with Indian authorities due to their approach under a unified national government umbrella. For example, German education providers carry German Federal Government logos on their business cards. This approach has the advantage of promoting one single national banner.

There are good examples of collaborative UK ventures. For instance the Association of Colleges represents 33 UK further education colleges in India.²⁴ The Education UK Exhibition roadshows is another example of such collaboration.²⁵ Yet the UK's efforts sometimes appear fragmented as each college, university, and corporation goes to India with an aggressive agenda to push its own brand. Their campaigns often run parallel to that of other UK agencies promoting the UK's capabilities.²⁶ This can confuse prospective clients.

Further research would be helpful in identifying whether the UK is in fact losing out to other, more unified approaches. An alternative view would be that as the UK has a long-established brand as a world leader in education it does not need a unified approach and individual providers can compete effectively.

Risk appetite, patience and flexibility

Lower price points, margins and other market complexities present UK providers with unfamiliar challenges. Despite this adding to the risk, many aim to recoup their investment year-on-year. Taking a medium to long-term approach to Rol is key to understanding and managing this risk.

It is also important to be flexible and innovative. E-learning is a fast-changing sector. India is a rapidly evolving place. Risks are unavoidable and measured risks do need to be taken to experiment.



Globsyn, a bespoke solution for India aiming to go global

Kolkata-based Globsyn, a technology, knowledge, and skill development firm, has developed an education model designed to cater to the Indian context, aimed to uplift learners. The firm has a deep understanding of the challenges faced by industry to find employable graduates and its curriculum blends knowledge training with practical employability skills. Through the use of technology the model replicates Globsyn's classroom setup across 400 skill centres. The firm aims to reach 750 centres by the end of 2015. To standardise delivery it has developed a network of more than 300 sector-skill certified teachers.

One of its first products, the Globsyn Finishing School, trains engineering graduates on the latest IT technologies and on soft skills in a compressed, fourweek programme.

Globsyn Skills works with 200 engineering colleges nationally in 12 technology domains. Between 2012 and 2014 it saw rapid growth in the number of student enrolments reaching more than 56,000 trainees.

Globsyn Skills has established partnerships with industry, including Wipro and G4S, to produce work-ready graduates by offering traditional training and work placements. The company now plans to invest in a virtual employment exchange platform called 'Hunargaar' to connect a skilled workforce with corporates.

Backed by the Ministry of Finance Globsyn has devised a 'learn and earn' programme where the student is reimbursed the course fee upon successful completion. The programme is tailored to sectors with high demand for talent, including retail, telecoms, security, and the financial and professional services.

Globsyn has also worked with some of India's state governments to implement skills development initiatives.

Understanding India's aspirational culture Globsyn places great importance on student graduation ceremonies and recognition. For example, it congratulates graduates via social media when they secure a job placement.²⁷



India is evolving, presenting an opportunity for UK-India collaboration

The speed at which India develops and merges with global megatrends will increase. Greater penetration of mobile devices and Internet connectivity will continue to transform the operating environment.

The UK can capitalise on its existing strong ties with India by learning from what India has to offer. India has a plethora of indigenous enterprises, reaching out to create international footprints. It has a growing pool of innovators with a can-do attitude. It is a leader and innovator of IT technologies offering great opportunities for collaboration, especially in e-learning.

Predicting the future: Tips for a successful India strategy in e-learning

The following tips will help UK companies formulate a strategy to demonstrate the UK's value and better capitalise on the e-learning opportunities in India:

• **Anticipate** where the Indian economy is heading. Work closely with contacts in government, academia, and business to make projections and set out a strategy that works for all. This approach is preferable to going to the market with a pre-packaged e-learning solution

• **Understand** the country's business needs. Unless the solutions offered cater to the realities faced by prospective employers in a fast-paced environment they will likely be irrelevant and unsuccessful

• **Find like-minded partners**. Take the time to find suitable partners to run pilots with. These partners should have a similar strategic and educational vision. Driving innovation and with funds to invest, India's private sector in particular has a strong appetite to compete globally

• **Don't let tech dictate the goals**. It is essential to avoid the trap of letting the technologies prescribe the education. Successful e-learning is essentially about going back to basics: identifying the problem, putting education at the core of the strategy to solve the problem, and choosing the technology that works best to deliver this strategy

• **Contextualise**. Education strategies in India must be sensitive to the local context in order to be successful. Whether it is digital, traditional or blended learning, providers need to take into account the local social and infrastructure environment.



3D Simulations: a modern and cost-effective solution at Tata Motors

Tata Motors, in collaboration with Tata Technologies, assessed the feasibility of manufacturing a new vehicle model with the help of a bespoke virtual simulation of their processes, factory layout, and robotics. The challenge was to manufacture the new model with no additional human or machine resources. Through the use of 3D virtual models Tata Motors was able to successfully design a strategy without incurring any hefty capital expenditure.

3D visualisations have proved a thrifty option for the manufacturing giant: Production Engineering, Tata Motor's captive, provides it with tool design and feasibility services using 3D simulators to design complex machinery and train toolmakers and machine operators at a fraction of the cost.

Beyond Tata Motors, others are also realising the benefits of using virtual simulators in training. At the 'Welding in Shipbuilding Workshop' in Kerala in July 2014, shipbuilding experts including the National Institute for Research and Development in Defence Shipbuilding and the Welding Research Institute gave demonstrations on welding simulators. These technologies are being promoted to train welders who can use a computer to learn and improve welding skills without costly training directly with steel.²⁸



Conclusion

Despite India's massive, young population, the country faces a 250 million shortfall of skilled workers by 2022. With government campaigns such as Make in India, the country aims to transform itself in to a manufacturing powerhouse. It needs skilled workers to drive this change. To play their part Indians need quality education wherever in the country they might be.

The existing educational infrastructure is not geared towards getting students ready for the current or future needs of the country. Initiatives such as Digital India offer an opportunity. With the goal to increase Internet availability, it is one important factor in making quality education available to large parts of the population that have previously been excluded.

This presents an opportunity for UK e-learning businesses. India is already the second largest market for e-learning opportunities. E-learning content to be deployed in other countries is already being developed in the country.

The UK's experience with e-learning makes it an ideal partner for India. Its excellent academic capabilities, assessments methodologies, and a thriving technology sector make its proposition attractive.

India is a developing rapidly with indigenous enterprises creating international footprints and a vibrant and growing pool of innovators. It is an attractive market for the UK. India's pre-eminence in IT technologies offers opportunities for collaboration in e-learning. UK companies investing in e-learning for India need to anticipate where the country is headed economically and tailor their solutions accordingly.

India is a price-sensitive market with its unique needs and UK e-learning providers need to be mindful of the solutions they try to offer. Among other things, these solutions must be cost-effective and produce measurable Rol.

Products that make use of India's mobile phone and nascent Internet penetration will be well placed. Technology will play an important part in multiplying reach, but to meet the needs of learners and employers the key to success will lie in outcome-led, not technology-led solutions.



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UK LONDON HEAD OFFICE

12th Floor, Millbank Tower 21-24 Millbank, London SW1P 4QP United Kingdom Tel: +44 (0) 207 592 3040 enquiries@ukibc.com

UK INDIA BUSINESS CENTRE, BANGALORE

Prestige Blue Chip, No. 9 Hosur Road Nr. Dairy Circle, Bangalore 560 019 Karnataka, India BusinessCentres@ukibc.com

UK INDIA BUSINESS CENTRE GURGAON 7th floor, Tower B, Infinity Towers, Gurgaon, Haryana Tel: +91 1244 537 800 BusinessCentres@ukibc.com

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