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Foreword

This Government is committed to selling the UK proposition – why foreign companies should set up here and why our companies are the partners of choice in ICT.

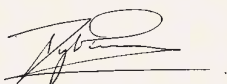
Effective marketing of the UK's Information and Communication Technologies (ICT) capability should lead to business success, boosting productivity and employment in the UK.

The ICT sector is one of the largest wealth creators in the UK. It contributes £66.4 billion per annum (or 6.4 per cent) to the UK economy and employs approximately one million people. It has been one of the fastest growing sectors over the last decade and is predicted to grow more than 5 per cent in 2008, compared with a European average of 4.7 per cent. Moreover the effective uptake and implementation of ICT is vital for every sector within the UK.

The ICT sector has been selected as especially important for the UK and UK Trade & Investment has been tasked with developing a coordinated business/government marketing strategy. This is a marketing strategy not just for UK Trade & Investment but for the whole UK ICT sector – covering all government departments and the private sector and how they can best work together to maximise their collective efforts, overcome the challenges they face and ensure that all available resources are used to their full potential.

I am delighted to be able to launch the UK ICT Marketing Strategy with this opportunity for you, business, to have your say and thus influence the future development of the strategy.

Effective implementation will be a team effort, but the opportunities are great. Let's work together to seize them!



Digby, Lord Jones of Birmingham
Minister of State for Trade and Investment





01

The UK represents
around a quarter
of the **global**
broadcast and
media technology
market

Introduction

UK Trade & Investment's purpose is to encourage the best overseas companies to invest in the UK and to help UK companies take full advantage of opportunities overseas.

The organisation embarked on a new strategy to achieve this in July 2006. The strategy stated that UK Trade & Investment would act as a catalyst for the more effective international marketing of the UK economy, seeking to pull together the disparate efforts of all those aiming to achieve similar ends, whether from the public or private sector. The strategy document *Prosperity in a Changing World* set out an overall template for how the UK economy is marketed internationally.

The strategy determined to bring more focus to marketing activity by concentrating on those sector groups which stand to offer the greatest benefit to the UK economy. Five sector groups were given priority: information and communication technologies (ICT), financial services, creative industries, life sciences and energy. The ICT sector was chosen because of its size, growth rate and place at the heart of much economic activity in today's Information Age.

For each sector, an international marketing strategy was to be developed, taking account of trading partners' and investors' needs and requirements and UK capabilities. The aim was for each strategy to focus the efforts of the private and public sectors and share responsibility for influencing the way in which the sector was promoted overseas. Only by co-ordinating marketing activity could its effectiveness be maximised. At the same time, each sector marketing strategy was to amplify the others, so as to reinforce positive perceptions of overall UK strengths and collectively address barriers to trade and investment.

This document now summarises the proposed international marketing strategy for the ICT sector.

It takes account of a number of other initiatives affecting the sector, for example the Information Age Partnership¹ and the recent Sainsbury Review of Science and Innovation².

UK Trade & Investment is acting as catalyst for and co-ordinator of the marketing programme; but, for the strategy to be successful, the broad sweep of the UK ICT community needs to take ownership and implement it. The full impact will be substantial if there is general agreement about the adoption of a common approach, and if marketing and business support resources are combined effectively.

This document first addresses the marketing principles that lie at the heart of the strategy, then describes the analysis that UK Trade & Investment developed in partnership with the ICT consultants, Gartner, on the ICT sector itself and on the geographical markets which represent potential trade and investment partners. The next section sets out the principal opportunities for the UK that have been identified. All this is then drawn together into an outline marketing plan, indicating proposals for resource allocation, messages and marketing activities to be shared by industry and government.

Approximately 150 stakeholders, largely representing government departments, non-departmental government bodies, regional organisations, devolved administrations, intermediary associations and overseas posts have so far been consulted and we are grateful to them for their input.

The purpose of this document is to stimulate others, especially a broader cross-section of the ICT business community, to contribute their thinking to the approach that has so far been developed. Information on how to respond is included at the end of this brochure, where there is also more detail on the source material.

In devising a marketing strategy for such a multi-faceted sector as ICT, a balance must be struck between an approach that tries to take account of all sub-sectors and markets but is inevitably complex, and a simpler, more unifying approach that then risks failing to take account of important market distinctions. But the aim is, by the end of this process, to have agreement between government and business on a marketing programme that is inspiring, maximises the impact of our resources and enables our ICT sector to achieve its potential for international commercial success.

¹ The Information Age Partnership is an ICT industry and government forum which provides leadership in the UK and gives advice on taking maximum global advantage of the technological, economic and political developments which characterise the Information Age

² 'The Race to the Top', A Review of Government's Science and Innovation Policies, October 2007

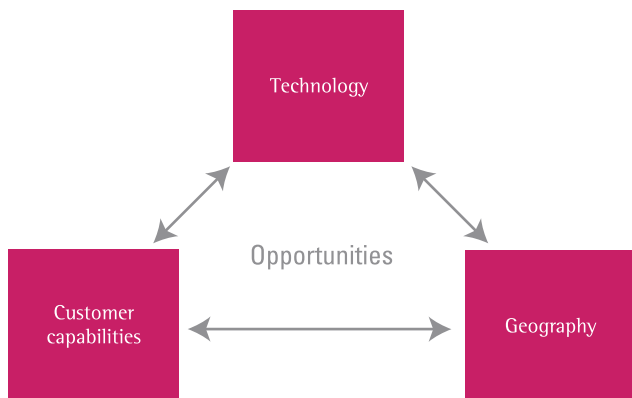
Marketing principles

Together government and industry should aim to:

- focus on important sectors and technologies where the UK has a comparative advantage and on the overseas markets which offer the greatest opportunities
- understand what businesses need, seek the best opportunities for the UK, and match UK and overseas partners
- use resources to maximum effect by co-ordinating the work of central and regional government with that of the private sector.

Market research is critical to identify UK capabilities and relative strengths and market needs. In the case of ICT with its rapid developments, it is essential to establish a clear view of the progress of emerging technologies so as to anticipate future trends.

The opportunities which the UK should address as priorities will therefore emerge from a matching of three factors, as illustrated in the diagram below:



Technology

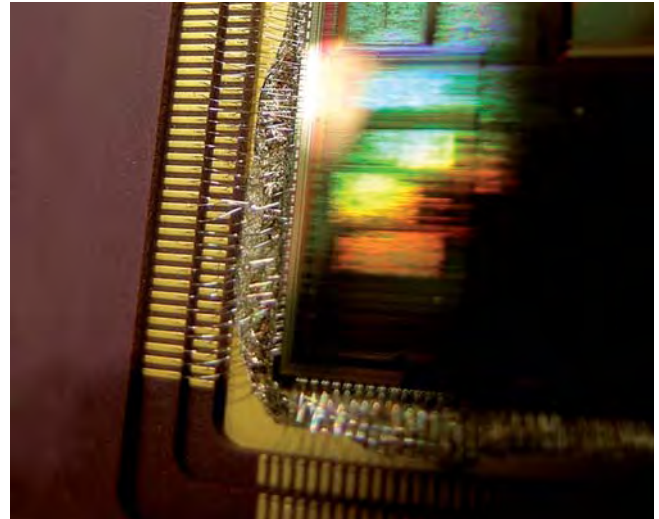
Which technologies are up-and-coming at present?
Where are they on the cycle of maturity?
How will they develop in the strategy timescale?

Customer capabilities

What are the UK's detailed capabilities?
How can the UK best link these capabilities to the leading technologies in the priority markets?

Geography

Which countries should be the focus?
How do they group together?



ARM

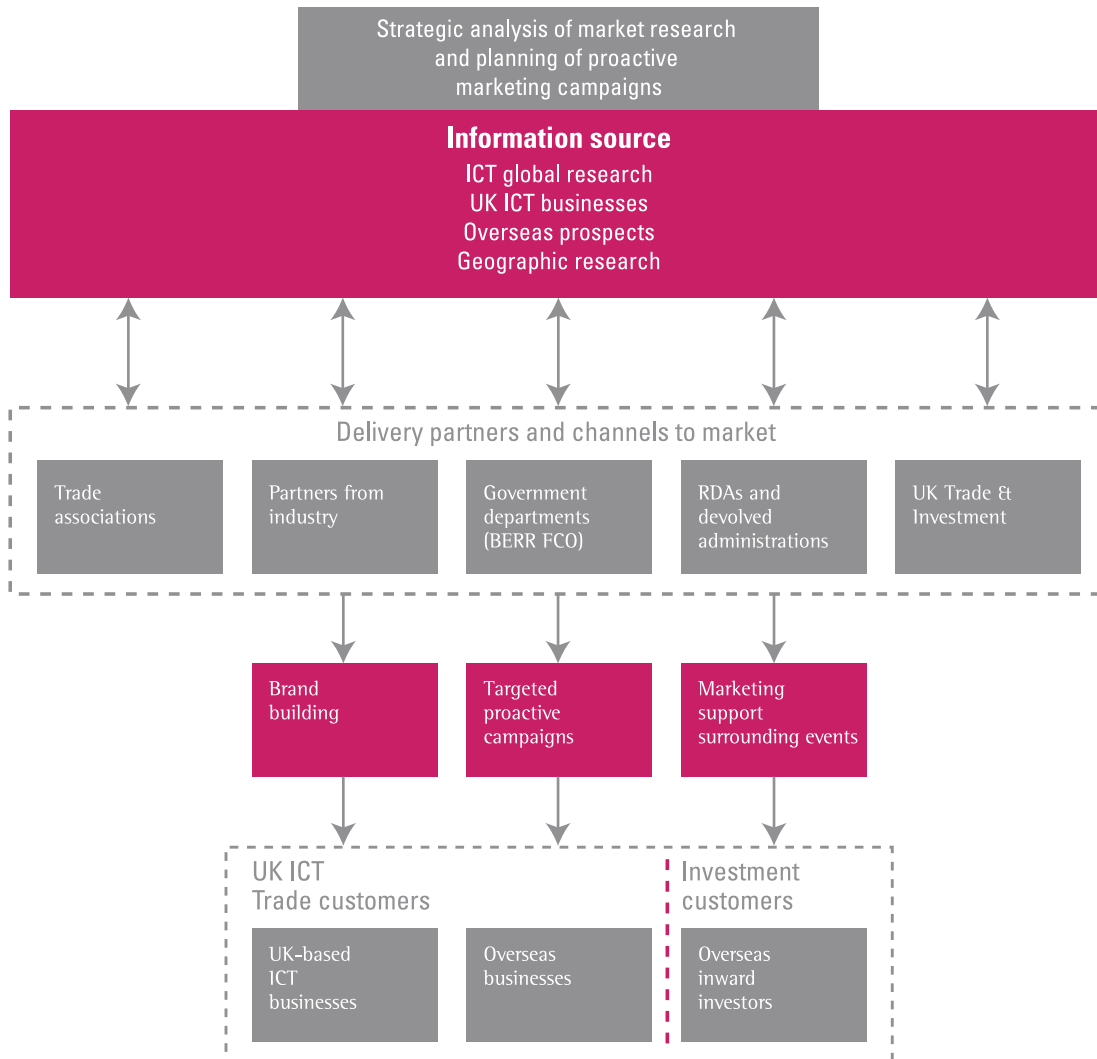
ARM is the world's leading semiconductor intellectual property supplier.

ARM technology is at the heart of advanced digital products that range from wireless, networking and consumer entertainment solutions to imaging, automotive, security and storage devices. The company's technology has been incorporated into iconic products such as the Apple iPhone and iPod and the Sony PlayStation 3 and PlayStation Portable.

ARM designs and licenses intellectual property (IP) solutions that enable developers to create next-generation products both rapidly and cost-effectively. The company's comprehensive IP and tools portfolio includes 16/32-bit RISC microprocessors, data engines, graphics processors, digital libraries, embedded memories, peripherals, software and development tools, as well as analog functions and high-speed connectivity products.

The following sections of this brochure describe the analysis undertaken to map the UK ICT sector and identify the likely sources of demand in trade and investment. This can only be a snapshot, of course, and continuing refreshment of the underlying data set will be necessary to ensure the marketing programme stays up to date.

With the research available, the aim is for all delivery partners capable of reaching target customers, investors and their influencers to work together with common messages, as illustrated below.



Understanding the ICT sector

The ICT sector represents a vast array of activity, from design and production of semiconductors used in consumer gadgets like mobile phones and MP3 players, to development of the software used by the City of London's world-leading financial services industry. It is also changing at a remarkable pace, as illustrated by the 'download revolution' of content in the entertainment industry, as media, telecommunications and information technology converge.

Horizontal and vertical sub-sectors

To make sense of such a diverse sector, UK Trade & Investment conducted a programme of analysis to identify sub-sectors whose components shared common characteristics. A segmentation exercise, based on a series of scale and behavioural factors, was then undertaken to find the industries that were more likely to deliver higher value investments to the UK. UK Trade & Investment analysed the extent to which a segment was likely to 'disrupt' society by its impact in a number of spheres.¹

Each segment was also reviewed for the intensity of a series of 'attractive' factors, assessing:

- market size and/or expected growth in a segment
- availability of technology and/or technologists for that segment
- availability of risk capital to finance expansion of firms in that segment.

Following these analyses, eight sub-sectors have been chosen for attention in this marketing strategy. There may be some overlap, but the different factors affecting each make it useful from a marketing perspective to consider them separately.

Four are described as 'horizontal' – that is to say, they relate to a field of technology. They are:

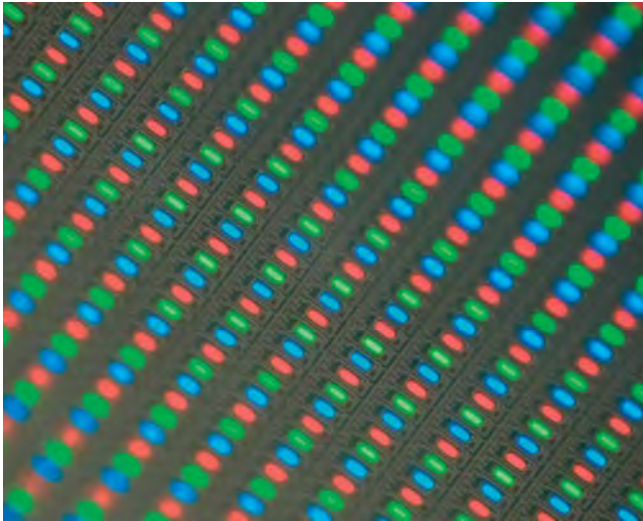
- communications, including fixed and mobile telecommunications and broadcast
- industrial electronics, including embedded systems and systems integrators
- enterprise software, systems and services
- consumer electronics, including TVs and games consoles.

The four others are 'vertical' sub-sectors, meaning that the connecting factor is the end-purpose for which the technology is designed. They are:

- e-government
- financial services
- healthcare
- retail and logistics.

Analysis may be carried out, as resources allow, of further segments such as utilities, construction, discrete manufacturing, security, education and transport.

¹ A PESTLE analysis looking at Political, Economic, Sociological, Technological, Legal, and Environmental factors.



Cambridge Display Technology

Cambridge Display Technology is the world's leading developer of technologies based on polymer light emitting diodes (P-OLEDs). The company started as a spin-out from the University of Cambridge and is now a member of the Sumitomo Chemical Group of Companies.

P-OLEDs are set to replace existing display technologies in a wide range of applications including information management, communications and entertainment. P-OLED technology has been licensed to various companies worldwide including Panasonic, MicroEmissive Displays, Plastic Logic and Add-Vision.

With a world-class portfolio of intellectual property centred on light emitting diode technology, Cambridge Display Technology continues to invest heavily into the development of materials, processes and devices to enable the commercialisation of superior display and lighting products.

Technological change

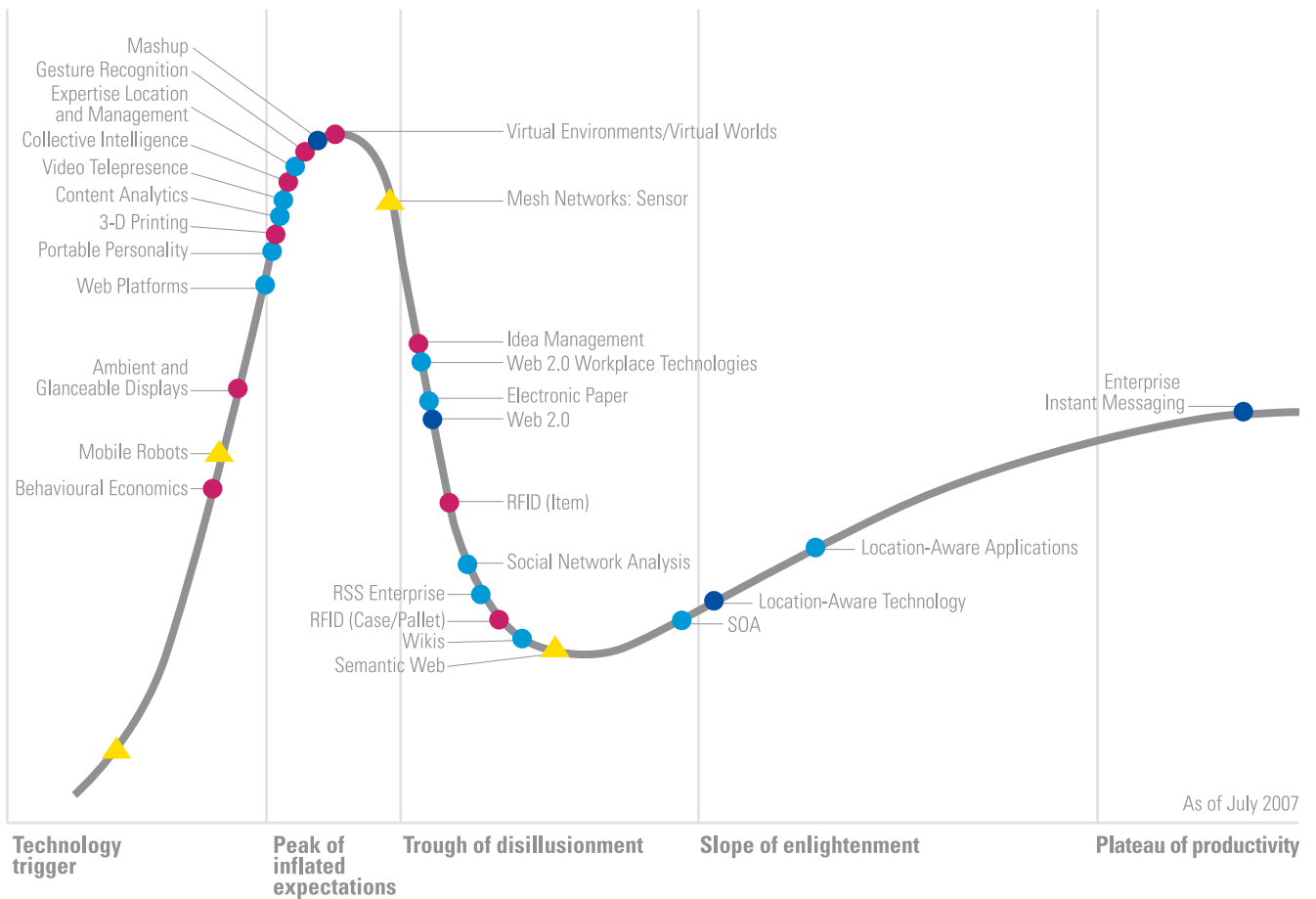
Given the pace of change, a marketing strategy must anticipate technological development so that marketing resource can be applied to the product and service areas of tomorrow's suppliers and customers. UK Trade & Investment partnered with Gartner to assess the emerging technologies in each of the eight chosen sub-sectors and their prospects for mainstream adoption.

Gartner used 'hype cycles' as an illustrative tool. Hype cycles characterise the over-enthusiasm or 'hype' and subsequent disappointment which typically happen with the introduction of new technologies. Hype cycles also show, however, how and when technologies move beyond the hype, offer practical benefits and then become widely accepted.

The five phases of a hype cycle are:

- 1) Technology trigger: the breakthrough, product launch or other event that generates significant press and interest.
- 2) Peak of inflated expectations: a frenzy of publicity leading to over-enthusiasm and unrealistic expectations. There tend to be more failures than successes at this stage.
- 3) Trough of disillusionment: technologies that are failing to meet expectations and are becoming unfashionable.
- 4) Slope of enlightenment: a period of experimentation where businesses seek to understand the true benefits and practical application of the technology.
- 5) Plateau of productivity: reached as the benefits become widely demonstrated and accepted. The technology becomes increasingly stable and evolves.

A sample Gartner hype cycle for Emerging Technologies is illustrated right.



Years to mainstream adoption

- Less than 2 years
- 2 to 5 years
- 5 to 10 years
- ▲ More than 10 years

Source: Gartner (July 2007)

Gartner's hype cycles for each sub-sector¹ are an important component in guiding the direction of allocation of marketing resources.

¹ See individual sub-sector reports at www.ukictmarketingstrategy.co.uk

02

There are over
8,000 industrial
electronics
companies in
the UK

Market characteristics

Analysing the characteristics of overseas markets is a second important component for the marketing strategy.

To facilitate understanding of the demand characteristics of the rest of the world for ICT products and services, countries were divided first into two categories, according to their relative wealth (as measured by per capita income). Those with higher relative wealth (gross national income per head greater than US\$11,000) are defined as established, while the remainder are described as developing (provided their growth rate is greater than the OECD average of 3.5 per cent). In turn, each group of countries is divided into a further two categories, according to the size of their economy – whether or not it surpasses US\$500 billion.

Hence established markets can be described as either ‘of scale’ (more than US\$500 billion) or ‘with opportunities’ (less than US\$500 billion), while developing markets can be regarded as either ‘with scale and potential’ (more) or ‘with high potential’ (less).

The resulting four categories, and examples of the countries to which they apply, are:

- established markets of scale (EMS) – the G7 countries and major EU states
- established markets with opportunities (EMO) – Korea and Switzerland
- developing markets with scale and potential (DMSP) – Brazil and China
- developing markets with high potential (DMP) – the Czech Republic and South Africa.

The principal characteristics are supplemented by subsidiary characteristics in order to make judgements on the real attractiveness for trade or investment. The characteristics vary according to sector and sub-sector:

- Population trend needs to lag GDP growth for economic development to improve consumer incomes.
- Mobile phone penetration gives an indication of the ease of doing business in a country and the likely supply and demand for communications and consumer products and services.
- Broadband penetration gives an indication of the practical ease of doing business in a country and the sophistication of its fixed line telecommunications infrastructure.
- Living standards indicate distortions in economic development often prevalent in developing countries, where industrialised cities have relatively affluent populations while rural areas remain poor.
- Demographics indicate the relative youth – and higher interest in technology and consumer products, or age – and higher interest in healthcare and financial services.
- Long-term growth rate indicates the future potential of a country, initially in national infrastructure; latterly in consumer-driven expenditure, if GDP growth consistently outstrips population growth in a reasonably benign political environment.
- Political environment indicates relative stability and/or openness to trade and investment.
- Technology environment indicates the willingness of a population to adopt new technology.
- Legal and regulatory environment gives an indication of commercial risk affecting contracts.
- Regulated financial sector gives an indication of specific supply and demand for financial services.



03

The UK is at
the **forefront** of
electronics design

Opportunities for the UK

Marketing resource should be prioritised to the technology sub-sectors where the UK has a comparative advantage on the supply side and to markets where the demand is greatest. To inform the allocation of resource in the marketing strategy, therefore, a central purpose of the analysis undertaken by Gartner was to identify where the greatest opportunities are likely to lie.

Gartner and UK Trade & Investment accordingly compiled reports for each of the eight sub-sectors, which may be found in full at www.ukictmarketingstrategy.co.uk, the strategy website. Our assessment of UK capabilities and resulting market opportunities for each sub-sector is summarised below and we welcome views from industry and others to enhance the information that has so far been gathered.

For the ICT sector as a whole, the UK is considered attractive as a centre for inward investment by virtue of the size of the UK domestic market for ICT goods and services and the ease of connecting onward into other EU countries with similarly large markets; access to skilled people and high quality research and development; ease of raising finance in the UK, thanks to the sophistication of the financial services sector and the UK's legal and regulatory framework; and the use of the world's business language, English.

For trade, in general terms, the UK's sophistication in systems integration and the application of ICT to complex government and business services makes its expertise attractive to established and developing economies with the infrastructure capable of absorbing those skills and corresponding legal/regulatory frameworks. The UK's expertise in semiconductor design, embedded systems, sensors and other key components in consumer and industrial applications also creates significant export opportunities to economies where manufacturing of hi-tech goods is dominant.

Horizontal sub-sectors

Communications

The UK has considerable strengths in electronic chip design across a wide range of disciplines in wireline and wireless operations. It stands at the leading edge of development in mobile communications, including radio frequency and antenna design, digital radio and mixed signal design, embedded systems and system-on-chip technology. The applications for these components are enormous, ranging from sensors in industrial equipment to security tagging of high-value merchandise in retail environments and the display and functionality of the latest consumer gadgets.

The countries manufacturing mass hi-tech products for consumer or industrial use, such as Japan, Korea, China and Hong Kong, India, the US and Russia, are all therefore likely to be significant markets for UK companies in relation to communications technology.

The UK is highly attractive as a market into which to sell hi-tech communications products – it represents around a quarter of the global broadcast and media technology market, with a value of about £1.4 billion. It is also a centre for high quality R&D, particularly for early-stage research, with the potential to move from universities into spin-off commercial enterprises. It has a strong communications R&D skills base, particularly in radio frequency (RF) and mixed signal design (analogue and digital), which is a major factor in attracting investment from overseas companies.

The UK maintains a 19 per cent market share of Foreign Direct Investment projects in communications. Targets for further inward investment will be well developed EMS countries such as the US and Canada, Japan, France and Germany.

Regional clusters of expertise can be found near Cambridge in the East of England, around Bristol in the South West, and in Scotland's 'Silicon Glen' near Edinburgh. Cambridge in particular is one of the world's top high-technology cities, and hosts research centres for many communications multinationals such as ARM, AT&T, Broadcom, Cambridge Silicon Radio, Nokia, Nortel, Qualcomm, Symbian and Toshiba, building on a long academic and industry tradition in wireless technology.

Virtual groupings such as SET Squared (created by the Universities of Bath, Bristol, Southampton and Surrey to develop spin-out companies) and the Institute of Advanced Telecommunications have also developed as a result of the UK's skills and experience in communications technologies, concentrated around key universities and the international research centres of many of the largest global telecoms companies.

Industrial electronics

The UK has particular strengths in embedded systems used in manufacturing equipment and process control. It is a pioneer in many of the technologies underpinning flat panel displays, including plastic electronics design – particularly of low-power consumption applications, mixed mode audio, video, and radio frequency applications, and high performance processor architectures; and is strong at systems integration.

The UK is a leading supplier of avionics and advanced instrumentation and control systems as well as complex fabricated parts requiring precision multi-stage manufacturing processes.

Key markets are therefore those which either are high volume manufacturers of industrial equipment or hubs for the production of components. Most prominent are Japan, Korea, Hong Kong, Singapore and the US.

With an overall market in excess of €50 billion a year, the UK generally ranks in the top two in Europe for both market size and production in many categories in this sub-sector. There are over 8,000 industrial electronics companies in the UK and the sub-sector employs approximately 400,000 staff.

It is therefore an attractive market for inward investment from EMS countries with the capabilities to serve this demand, particularly Japan, Korea, the US, France and Germany.



GSM Barcelona

More than 300 UK companies attended 3GSM World Congress 2007 in Barcelona, Spain, the single largest country presence for exhibitors. The companies helped to demonstrate the UK's dominance as a centre of innovation in wireless and mobile communications.

The UK also swept the board of the 3GSM Awards, winning 7 of 21 awards, including two for innovation and one for mobile entertainment.

UK Trade & Investment organised a promotional stand at the show, together with networking events and business meetings. Fourteen leading UK companies and Leeds University were exhibiting from the showcase stand and together they attracted 115 quality leads from major companies such as Mastercard, Etisalat, BBC, Alcatel Lucent, Siemens, Reliance, Fujitsu, Saudi Telecom, Time Warner, Microsoft, Motorola and Ericsson.

HRH Duke of York and UK Trade & Investment Chief Executive Andrew Cahn also attended the show to raise the profile of UK companies and help promote their world-leading technology.



Roke Manor Research

Roke, one of the world's leading electronics and telecommunications research companies, specialises in developing innovative products in networks, communications and sensors for a wide range of world-class clients in both the commercial and government sectors.

Roke invests significantly in the commercial development of its own intellectual property and was recently the highest ranked UK company for the number of patents filed with the UK Intellectual Property Office. Roke's innovative developments have included Vigilance™, a multilateration product that is a proven alternative to Secondary Surveillance Radar for accurate aircraft location; the Automatic Number Plate Recognition system, which recognises number plates from more than 25 countries and reads more than 20 million licence plates each month; and Hawk-Eye, the innovative motion-tracking system that has revolutionised decision-making in international sports such as tennis and cricket.

Consumer electronics

The UK is at the forefront of electronics design, especially low-power mixed analogue and digital designs for portable devices such as MP3 players and mobile phones. Given the manufacturing strength of Japan, Korea, China and the US, these countries offer the greatest opportunities for trade.

The UK is the largest consumer electronics market in Europe and UK consumers regularly follow technological advances and quickly upgrade their products. In the fast-growing computer games industry, the UK represents the third largest interactive entertainment market in the world. By 2010 the UK market is forecast to be worth around US\$5.86 billion. In addition, the UK has the highest number of games development companies and publishers in Europe.

Over the next five years the electronics sector is forecast to grow faster than any other major UK retail sector, with average annual growth of 4.4 per cent. Flat-panel TVs, games consoles and high definition DVD will continue to be a major source of growth as a result of the UK's very high take-up of digital technologies in mobile communications and digital TV. Video equipment and games consoles are the most lucrative products, generating 80 per cent of the market's aggregate revenues.

Overall, the UK consumer appetite for new technology has supported the growth of an extremely healthy and increasing marketplace for products supported by UK-led cutting-edge design. The UK therefore represents an attractive market for inward investment from markets with strength in satisfying these consumer needs, notably the EMS countries of Japan, Korea, the US, France and Germany.

Enterprise software, systems and services

In addition, the UK is becoming a global leader in successfully implementing large-scale systems integrations. It therefore has tremendous opportunities to offer consultancy skills to highly developed economies that can profit from its expertise, notably the US, but also most other EMS and DMSP markets.

The UK has a very large market for software products and services, hosting around 120,000 firms employing over 500,000 staff. UK IT professional services businesses generated £27.7 billion in 2006, which is expected to rise to £29.4 billion in 2007, with average annual growth of six per cent. The UK is also becoming a test bed for very large scale complex system integration with a range of demanding private and public sector projects.

Overall, with an increasing need to improve the efficiency and effectiveness of operations in both the public and private sector, there is significant scope in this sub-sector for continued growth. Marketing of inward investment opportunities should therefore be focused on countries with skills meeting the demands of complex business organisations: pre-eminent are the US, France, Germany and Japan.

Vertical sub-sectors

Financial services

The financial services value chain has been transformed by communications and information technology in recent years. London in particular has embraced technology, globalisation and its advantageous time zone position to become the leading international centre in a wide range of financial services. Proactively embracing the opportunities offered by technology, the sub-sector is at the forefront of global innovation and investment.

Worldwide banking spend on ICT was estimated at US\$222.7 billion in 2006. Banking represented 11 per cent of the overall worldwide IT market in 2005 and this is expected to have grown to 11.6 per cent in 2010. Worldwide insurance spending is projected to total US\$136.8 billion in 2006, a 3.1 per cent increase from 2005 spending of US\$132.7 billion. The insurance market is expected to grow by 4.9 per cent to US\$233.6 billion in 2007.

The UK's considerable tradable expertise must therefore be attractive to markets which are themselves either major financial centres or are rapidly growing to become such centres, for example Tokyo, New York, Hong Kong and Russia.

The financial services sector is the largest contributor to the UK balance of payments and a major contributor to GDP and employment. As a major consumer of IT and communications services, it is also the leading application market for ICT. The UK is:

- the world's largest single market for international bank lending
- the world's leading market for international insurance
- one of the world's largest markets for asset investment management
- the host of Europe's largest banking sector
- the owner of the world's largest trade surplus in financial services.

Nearly 500,000 people work in financial services and with IT spend averaging around £6,000 per employee, around £3 billion a year is spent on ICT in the sub-sector.

This sub-sector is particularly attractive to inward investors from EMS countries with skills and expertise to offer – notably the US and Canada, France and Germany.

The UK is the largest consumer electronics market in Europe.



Retail and logistics

The UK's strengths lie in integrating sets of disparate technologies to provide turnkey solutions. In-store wireless capabilities, for example, use radio frequency identification (RFID). Tagging of items offers much-improved flexibility, for example in supermarkets/retail outlets, together with improved accuracy in inventory tracking and replenishment. In cold chain management, it allows logistics firms to check consignments from outside the cold store. RFID also plays an important part in anti-tamper technology.

Supply chain management in the food supply chain presents an important opportunity. For example, new technology can help track and trace the food supply chain in both arable and livestock farming, to help overcome health and safety issues that may arise in countries that do not have the same regulatory standards as the UK.

Near Field Communications (NFC) and mobile transactions and payments are key areas for the future of the sector. NFC is in effect a subset of RFID but providing a divergent benefit to the consumer for many applications.

Data analytics is another area of opportunity for the sector. There is debate within the retail and logistics industry concerning consumer purchase data: how much information should be held, what may be done with it. Given the increasing importance consumers are placing on personal privacy and data protection, the need for technology which assures secure transactions is vital. The UK ICT sector has a potential advantage if it builds security considerations into product design, rather than adding it as an afterthought.

Some of the most advanced retail supply chains in the world are based in the UK and both national and international logistics operators are well represented. There is therefore great potential to export consultancy expertise.

Attractive markets are those with large or well-developed retail markets, such as France, Japan and the US; and countries such as China, manufacturing end products used in the sector, for which the UK ICT sector can offer important, differentiating components.

The UK market for ICT in retail and logistics is likely to become, and remain for some years, the largest in Europe and one of the largest in the world due to the drive for increased efficiency in our world-leading retail and logistics players. Retailers have become much more focused on solutions that enhance the basic customer experience and that drive revenue. This revolution will be focused on the store, but knowledgeable retailers will demand that technologies have a positive impact on the customer experience, as well as on productivity.

The increasingly 'customer-centric' ethos of the retail and logistics sub-sector will drive continued growth to integrate solutions to drive down consumer costs whilst at the same time improving customer-facing applications.

There is a strong UK appetite for novel technology products requiring secure tagging, especially wireless technology, low-power mixed mode devices and antennae technology.

EMS markets with large, successful retail and logistics operations themselves are likely to see attractive inward investment opportunities in the UK; and France, Germany and the US are felt to be highest on this list.

Healthcare

The UK government invests large sums in a healthcare system which is accessible to all. In order to deliver effective and efficient service to patients it has led the world in the development of enabling technology. Among UK general practitioners, 98 per cent use electronic medical records and practice management IT systems.

Key opportunities for healthcare are associated with the way information is captured, stored, analysed and then finally used; where the delivery of services is undertaken, in hospital or in the home; and the use of technology as a prevention mechanism as well as a means of speeding accurate diagnosis. All these applications and services are being enabled with ICT and are driven primarily by cost pressures in established markets and low health in emerging markets.

Many countries around the world are investing heavily in hospital, local, regional and countrywide healthcare IT projects. UK businesses could therefore look to expand the range of geographic areas in which they are active.

Demand in more mature economies arises in the following areas:

- computer-based patient record systems
- personal health management tools (online applications that provide interactive functionality to assist consumers in managing their own health and disease processes)
- home health monitoring via telemedicine
- patient self-service kiosks (a computer device that enables two-way communication between a patient and a healthcare provider's systems, that can include various input devices and sensors, such as blood-oxygen saturation, electrocardiograms and credit card readers)
- electronic prescribing (that allows physicians to send prescriptions to pharmacies online)
- wireless healthcare asset tracking (WHAT), via locator devices, such as radio frequency ID (RFID), attached to items such as intravenous pumps, wheelchairs and pulse oximeters.

Best trade opportunities are likely to be in EMS and EMO countries with well-developed healthcare systems – notably Scandinavia, France, the US, Japan and Hong Kong.

The UK is host to world-class research institutes and a strong science base. The provision of online training and continuous medical education is seen as a growth area.

Potential inward investors see opportunities to sell their services within telemedicine, e-health and telecare. There is also potential for provision of online training, continuous medical education and RFID technology.

Healthcare technologies investors will be drawn from EMS countries such as the US, Canada, France and Germany, all of which have established healthcare systems.

E-government

The UK government's transformational agenda relies upon integrated and effective technology to support provision of public services; hence there is a great deal of investment in this sub-sector.

Under the UK government's national strategy, *Transformational Government*, ICT is seen as a major enabler: a number of key government programmes made possible by ICT are under way, including the National Identity Scheme and National Programme for IT in the NHS (the world's largest civilian IT project costing over £12 billion).

Expertise is exportable, but dependent on other countries having similar legal and institutional infrastructures.

The London, East and South East regions of England host one of the two largest e-government clusters in the world; which in turn attracts one of the world's largest ICT for e-government clusters, including headquarters and operations centres of many leading software and communications players. The UK's second strongest cluster for e-government lies in Scotland, between Edinburgh and Glasgow.

This makes the UK attractive as an inward investment location to EMS countries with well-developed e-government systems themselves, notably the US and Canada, France and Germany.

04

The UK is a **leading** supplier of avionics and advanced instrumentation

The UK is host to world-class research institutes and a strong science base.



An outline marketing plan

This analysis leads to our marketing plan, which is expressed in terms of objectives, resource allocation, messages and proposed activities.

Objectives

The overall objective for marketing the UK ICT sector is to help boost its productivity and contribution to the UK economy – both by fostering the profitable and sustained internationalisation of UK-based ICT companies, and by stimulating and developing ICT overseas inward investment into the UK.

Environmental factors such as taxation, regulation and skills all contribute towards trade and investment outcomes, and recommendations to relevant policy makers may emerge as an outcome of the strategy implementation programme. Success will also be very much affected by achieving better, joined-up promotion of the sector overseas, correcting faulty perceptions where these exist and raising awareness of the UK's strengths.

Many organisations and individuals currently play a part in the way the sector is presented to overseas markets and an important aim for this marketing plan is to have all the UK bodies which share responsibility for it working together in a unified way. Regional Development Agencies, Devolved Administrations, the Technology Strategy Board and UK Trade & Investment, working alongside industry and partner organisations, should all ensure that their activities are mutually supportive on the public sector side and mesh well with the needs of the sector.

A Marketing Strategy Board

We propose that a Marketing Strategy Board be established by Spring 2008, comprising representatives from private and public sectors, which would examine and select priorities, identify and recommend budgets and drive the marketing programme forward. It should be chaired by a senior industry figure from the UK ICT sector.

Resource allocation

The target audiences for this marketing strategy fall into three types:

- potential and actual overseas buyers of UK ICT products, processes or services
- potential and actual overseas investors in the UK ICT sector
- the influencers of both these groups, including intermediaries, such as financial and technical advisers, regulators and governments

In terms of prioritisation, based on the analysis of UK opportunities and workshops undertaken by UK Trade & Investment with Gartner, two summary charts have been produced in matrix format, cross-referencing UK opportunities in ICT with geographic markets. These are shown at figures 1 and 2 on the following pages.

Figure 1. Prioritisation of global trade opportunities by sector

TRADE		Communications	Consumer electronics	E-government	Enterprise systems	Financial services	Healthcare	Industrial electronics	Retail and logistics
EMS	Australia	M	M	M	M	M	M	M	M
	Canada	M	M	M	M	M	M	M	M
	France	M	M	M	M	M	H	M	H
	Germany	M	M	M	M	M	M	M	M
	Italy	M	M	M	M	M	M	M	M
	Japan	H	H	L	M	H	H	H	H
	Korea	H	H	L	M	M	M	H	M
	Netherlands	M	L	M	M	M	M	M	M
	Spain	M	L	M	M	M	M	M	M
US	H	H	L	H	H	H	H	H	
DMSP	Brazil	M	L	L	L	M	M	L	M
	China	H	H	L	M	L	L	M	H
	India	H	M	L	M	M	M	M	L
	Mexico	L	L	L	M	L	L	M	M
	Russia	H	L	L	M	H	M	M	M
EMO	Belgium	M	L	M	L	L	L	L	M
	Czech Rep.	M	L	L	M	M	L	M	M
	Denmark	M	M	M	M	M	H	M	M
	Finland	M	M	L	M	M	H	M	M
	Hong Kong	H	M	M	M	H	H	H	H
	Ireland	L	L	M	M	M	M	M	M
	Israel	L	L	L	L	L	L	M	L
	New Zealand	L	L	L	L	L	L	L	L
	Norway	M	M	M	M	M	H	M	M
	Portugal	M	M	M	M	M	M	M	M
	Qatar	L	L	L	L	L	L	L	L
	Singapore	M	M	M	M	M	M	H	H
	Sweden	M	M	M	M	M	H	M	M
	Switzerland	M	M	L	L	M	M	L	M
Taiwan	M	M	M	L	L	M	M	H	
UAE	M	L	M	M	M	M	M	M	
DMP	Argentina	L	L	L	L	L	L	L	L
	Egypt	M	L	L	H	M	L	M	M
	Estonia	M	L	L	L	M	M	L	M
	Hungary	M	L	L	M	M	L	L	M
	Jordan	L	L	L	L	L	L	L	L
	Latvia	M	M	M	L	L	L	L	M
	Lithuania	M	M	M	L	M	M	L	M
	Malaysia	M	L	M	M	M	M	M	M
	Pakistan	M	L	L	M	L	L	L	M
	Phillippines	M	M	M	M	M	M	M	M
	Poland	M	L	L	L	M	M	L	M
	Romania	M	L	L	M	M	L	L	M
	South Africa	M	L	L	L	M	L	L	M
	Sri Lanka	L	L	H	M	M	L	L	H
	Thailand	M	M	M	M	L	L	L	M
	Tunisia	L	L	L	L	L	L	L	M
	Turkey	M	L	L	M	M	M	L	H
Vietnam	M	L	L	M	L	L	L	H	

Total number of trade opportunities	High	41
	Medium	216
	Low	135
	TOTAL	392

Figure 2. Prioritisation of global investment opportunities by sector

INVESTMENT		Communications	Consumer electronics	E-government	Enterprise systems	Financial services	Healthcare	Industrial electronics	Retail and logistics
EMS	Australia	L	L	L	L	L	L	L	L
	Canada	H	M	H	M	H	H	M	M
	France	H	H	H	H	H	H	H	H
	Germany	H	H	H	H	H	H	H	H
	Italy	L	L	L	L	L	L	L	L
	Japan	H	H	L	H	L	L	H	M
	Korea	M	H	L	L	L	L	H	M
	Netherlands	M	M	L	L	L	L	M	M
	Spain	M	L	L	L	M	L	L	L
US	H	H	H	H	H	H	H	H	
DMSP	Brazil	L	L	L	L	L	L	L	L
	China	M	M	L	L	L	L	M	M
	India	M	M	L	M	L	L	M	M
	Mexico	L	L	L	L	L	L	L	L
EMO	Belgium	L	L	L	L	L	L	L	L
	Denmark	L	L	L	L	L	L	L	L
	Hong Kong	M	M	L	L	L	L	M	M
	Ireland	M	M	M	M	M	M	M	M
	Israel	L	L	L	L	L	L	L	L
	New Zealand	L	L	L	L	L	L	L	L
	Singapore	L	L	L	L	L	L	L	L
	Sweden	M	M	L	L	L	L	M	M
	Switzerland	M	M	L	L	L	L	M	M
Taiwan	M	M	L	L	L	L	M	M	
DMP	Estonia	L	L	L	L	L	L	L	L
	Malaysia	L	L	L	L	L	L	L	L
	South Africa	L	L	L	L	L	L	L	L
	Turkey	L	L	L	L	L	L	L	L

Total number of investment opportunities	High	34
	Medium	46
	Low	144
	TOTAL	224

Key for figures 1 and 2

- EMS Established markets of scale
- DMSP Developing markets with scale and potential
- EMO Established markets with opportunities
- DMP Developing markets with high potential

We propose that marketing resource be allocated broadly as indicated by the high/medium/low classifications, where each is interpreted as shown in the following charts:

Grade	TRADE Definition	Action
High	Significant level of opportunities in a growing sector with an adequate level of liberalisation and access	Proactive and planned activities
Medium	A qualified level of opportunity with potential for focused activity in stable and low growth sector	Activities to test and measure focused opportunities
Low	Low level of opportunity outside of specific qualified targets and possible regulatory and access challenges in some emerging countries	Reactive activities only associated with qualified opportunities

Grade	INVESTMENT Definition	Action
High	Strong or rapidly-developing investor base; excellent current prospects for multi-function presence, including R&D/eHQ	Proactive contact with assigned country single point of contact (eg country manager)
Medium	Significant and developing investor base; good medium-term prospects for multi-function presence, including R&D/eHQ	Proactive contact with assigned region single point of contact (eg regional manager)
Low	Low and/or stagnant investor base; limited prospects for multi-function presence, likely to focus on sales and marketing and customer service operations with eHQ and R&D elsewhere	Opportunity contact only

Views on the appropriateness of this proposed allocation would be valuable – see page 33 for more details on how to respond.

Many countries around the world are investing heavily in hospital, local, regional and countrywide healthcare IT projects.



Messages

The overarching strengths of the UK economy, from a trade and investment perspective, were identified in UK Trade & Investment's strategy document *Prosperity in a Changing World*. They include:

- the time zone in which the UK sits
- English as the universal business language
- a long tradition of openness to other cultures
- proximity to EU markets
- international connectedness
- sophistication and flexibility of London's financial markets
- the UK's light touch legal and regulatory system
- a skilled workforce, with excellence in research and development.

These features are encapsulated in the 'tier one' messages that UK Trade & Investment uses in its own promotions and encourages partners to reinforce:

'The UK – springboard for global growth'

The premise of UK Trade & Investment's overall marketing strategy is that additional tiers of messaging should be developed for each industry sector, and for the sub-sectors within it, so as to construct a compelling messaging framework.

For the ICT sector, the analysis shows that the UK's main competitive advantage lies in its inventiveness. Hence, it is proposed that the 'tier two' message should be:

'UK ICT leads the world in innovation and creativity'

'Tier three' messages are to be developed for the eight sub-sectors which are the focus of this document.



Wolfson Microelectronics

Wolfson Microelectronics is a global leader in the design and supply of high performance mixed-signal integrated chips for the digital consumer market.

The company is 100 per cent 'fabless' ensuring that its world-class expertise is focused on its tightly defined core competencies of product definition and design.

Wolfson Microelectronics has created more than 100 products that are essential to a variety of consumer applications such as digital televisions, set-top boxes, hi-fis, DVD players, mobile phones, PDAs, MP3 players, digital cameras, scanners, copiers and in-car navigation and entertainment systems. The company's high-performance semiconductors have been integrated into a range of iconic products that have been developed by leading international consumer electronic brands that include Sony, Apple, Microsoft, Canon, Hewlett Packard, Samsung, LG and TomTom.

Candidate activities

It is intended that funding for this marketing activity should come from both the public and private sectors. Additional resources beyond those already being committed by bodies individually may well not be required. Above all, better focusing and co-ordination should increase the effectiveness and value for money of future activity for all parties.

It will be for the Marketing Strategy Board to agree the programme of activity over the coming years, with particular reference to resource allocation and prioritisation among countries and sub-sectors. While no decisions have yet been taken as to the activities that should be undertaken, some options may be:

- senior ministers with support from industry to target key potential investors and supply chains
- the establishment of a network of 'ICT ambassadors' in key markets
- working with BERR to develop mechanisms to allow perceived regulatory barriers and other industry issues to be addressed
- an overseas press and PR programme to be instituted, to strengthen the profile of UK achievement in ICT
- an online presence to be developed as a focus for information on the UK ICT sector available to partners
- a mechanism to be established to enable SMEs to present their offer more easily to overseas multinationals
- advice and mentoring to directors of early-stage companies with promising global potential
- a 'prospects' database to be set up, identifying companies and intermediaries with an interest in investment or trade with the sector
- co-ordination of the UK impact at key trade shows and exhibitions
- publishing sub-sector data and surveys targeted on foreign companies
- support to UK companies looking to develop an offshore capability, specifically access to local knowledge and resources (eg via embassies and consulates)
- a programme of market research to take place to assess awareness of and attitudes towards the UK ICT sector and its principal competitors.

It will be important to be able to draw on as many cross-government, UK-wide ICT business information sources as possible. In some areas it may be necessary to construct new sources to provide the appropriate level of detail for UK ICT sector capabilities.

Views from industry and others are particularly sought on the appropriateness of these activities and additional proposals would be welcomed.

Evaluation

It is proposed that an evaluation process be established to monitor the effectiveness of the strategy over the coming years. It should be designed to allow feedback to inform the development of future marketing activity and seek to identify as far as possible the return on investment from the overall marketing programme.



Your views

We welcome views from the ICT industry, other government organisations, agencies, trade associations, academia, overseas posts and others on this strategy.

All feedback will be useful, but we would be particularly interested to have responses to the following questions:

- 1) Do you agree with the initial choice of sub-sectors being accorded priority? What changes would you propose, if any?
- 2) The strategy paints a broad picture of ICT sector global dynamics and UK opportunities. Do you feel the picture is complete? Where could it be reinforced?
- 3) What are your views on the proposed allocation of marketing resource?
- 4) What are your views on the candidate marketing activities described?
- 5) Effective promotion requires extensive time and effort from a wide range of stakeholders. What are your suggestions for how to catalyse support for the delivery of the strategy?

Please respond by email, stating your name, organisation and sector specialisation (if appropriate) to: ukictmarketingstrategy@ukti.gsi.gov.uk

Do please include any supporting evidence you feel would be valuable.

We need to receive feedback by: 31 January 2008

Your opinion is very important to us. All feedback will be considered in detail by the Project Team and taken into account when the final version of the strategy is created. We will be in touch if we have any questions or need clarification of your comments. If you would like to see the full evidence base for this document please visit www.ukictmarketingstrategy.co.uk

If you have any questions, please contact:

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In the UK, companies, including many of the world's major corporations, plug directly into the heart of global finance, global creative and professional services, global media and global talent. They enjoy access to world-class science and academia and link into a wide network of smaller enterprises, many of which are also world leaders in their fields.

A unique multicultural and entrepreneurial economy, the UK is at the hub of international business, bringing the world to a company's door. In short, it is the gateway to the globe.

The UK ICT marketing strategy is being co-ordinated by UK Trade & Investment.

Hit the world running ^{UK}

UK Trade & Investment is the government organisation that helps UK-based companies succeed in an increasingly global economy. Its range of expert services is tailored to the needs of individual businesses to maximise their international success. We provide companies with knowledge, advice and practical support.

UK Trade & Investment also helps overseas companies bring high-quality investment to the UK's vibrant economy – acknowledged as Europe's best place from which to succeed in global business. We provide support and advice to investors at all stages of their business decision-making. UK Trade & Investment offers expertise and contacts through a network of international specialists throughout the UK, and in British Embassies and other diplomatic offices around the world.

www.uktradeinvest.gov.uk

