



**Foundations First: Building the future of the
technology industry**

Intellect discussion paper

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1. Executive summary

- 1.1** Intellect is the UK trade association for the IT, telecoms and electronics industries. Our members account for over 80% of these markets and include blue-chip multinationals as well as early stage technology companies. These industries together generate around 10% of UK GDP and 15% of UK trade.
- 1.2** Intellect believes that the evolving landscape for ICT-enabled business contains both exciting and challenging developments. This paper seeks to address the changing business environment, seeking to highlight the opportunities for those involved in and dependent on the future of the ICT industry.
- 1.3** Modern business is ICT-enabled, and as information based working has become ubiquitous so increasing globalisation has fuelled the growth of a global marketplace for information-enabled business and talent. This marketplace creates fresh competitive pressures, reduces the importance of borders and other traditional inhibitors, and has engendered new business models which present difficulties and opportunities for all.
- 1.4** Comparisons can be drawn with many other industries which have at times felt similar pressures but, crucially, the ICT industry is still a maturing sector and must continue to develop as a profession whilst adapting to this changing marketplace. The same ICT sector which has made the globalising economy possible must now develop even further or risk falling behind customers' evolving expectations.
- 1.5** Drawing on the industry's own experience and learning from other sectors, this paper identifies a number of areas that will serve as the cornerstones of the industry's development. These are vital to meeting new challenges, but they will also underpin and maintain the considerable success which the sector has enjoyed thus far. The cornerstones are:

- relationships with other industries
- professionalism
- developing talent
- stimulating innovation

In forming this paper, Intellect consulted with a range of member companies across the technology sector, but also with a selection of stakeholders from Parliament, the media, government departments, academia and other relevant groups. In both summarising and challenging the findings of these consultations, this discussion paper aims to move the debate forward. Intellect looks forward to discussing its conclusions with industry and national stakeholders.

2. The introduction

2.1 The “technology industry” is a term which increasingly encompasses the many sectors which are converging into a global knowledge economy. Converging and shared activities include:

- creation of content and sharing of information
- provision of information systems for business, government and consumer
- channels of communication for distribution and access
- storage and processing of data and information
- corporate services and back-office processes

2.2 Complete statistics are hard to come by but all sources agree that the industry is a major contributor to the UK economy. Intellect’s figures estimate that:

- around half of the working population of the UK – roughly 14 million people – use technology every day
- the technology industry employs roughly 1.1 million people in the UK, in addition to those working within in-house ICT departments and business services in other sectors
- the information industry – i.e. those using and dependant upon ICT – generates exports of £20Bn p.a.
- in 2005, technology companies generated around 10% of UK GDP, at a value of approximately £100bn to the UK economy

2.3 Strategically, the technology industry is vital to the success of virtually all other sectors in the UK. ICT, including the internet, is the modern age’s definitive source of information and entertainment, but more importantly it is the irreplaceable facilitator of communication and commerce. In sectors as diverse as healthcare, financial services, education, travel, defence, trade, engineering, Government and retail, ICT provides the productivity gains, cost efficiencies and competitive advantage without which these industries would founder.

3. The challenge

3.1 Global markets and supply chains

The movement towards a global supply chain in the technology industry is driving a shift in business practice which is still to be fully realised. Developing economies offer vast new supplies of human resource, and the old barriers to information and capital flow have largely been eradicated by technology. The increasing number of new organisations which are emerging geared towards low-cost sourcing – especially in commodity areas and process provision – offer strong competition to established players, who must rapidly adapt or be undercut by a new generation of businesses expressly designed to exploit global production advantages.

3.2 First world resource

The use of new supply chain models also offers its own challenges. Established suppliers face new competitors whilst trying to build project and management capacity in client-facing geographies. This capacity forms the front office in an increasingly elongated supply chain, a business model which brings all the challenges – such as ensuring sufficient integration, quality and responsiveness – which are to be expected when working across different borders and with flexible methodologies.

3.3 Image of the industry

The development of the ICT industry thus far has not been without growing pains, and in certain sectors (notably government), some high profile difficulties have left the supplier community with a slightly tarnished image. Intellect believes that the industry's own best practice and learnings from more established service professions such as financial services, law or architecture can offer a road map for codifying the best of the industry's practice and improving its reputation.

3.4 Strategic importance

Despite its strategic importance and economic weight, the industry is not yet regarded as a fundamental building block of the UK economy in the same way as the manufacturing, financial services or agriculture sectors. In policy formulation, the technology industry must emphasise its own economic importance but also the role it plays as an enabler and transformer of other sectors. Particularly, the role of the innovative SME sector in developing fresh ideas and creating opportunities must be considered and encouraged by policymakers.

4. The opportunity

- 4.1 The prize of the future will go to those who can effectively develop and manage information-enabled business rather than create commodity ICT products. The industry's critical success factors are therefore partly based beyond the traditional context of the ICT industry, and its future will be determined not only by its own behaviour and reputation, but by the economic and regulatory environment, the pipeline of technology-wise business talent, and its relationships with other industries.
- 4.2 The UK technology industry is in an enviable position where it can build on existing strengths to develop a mature and sustainable industry with a distinct offering in the global market. Other complex service industries offer models for comparison, and can offer a roadmap for the industry as it strives to be a preferred business hub and centre of innovation:

Financial services

- The City of London has become the world's leading centre for Financial Services on the basis of creating a community of global organisations which have close relationships with each other, their customers, and the industries that support them – such as management consultants, technology companies, communications professionals, the creative industries and professional advisers.

- **The automotive industry**

The automotive industry has long been familiar with the use of a global supply chain. As company ownership and corporate structures diversified, so the industry spread its operations, utilising both low-cost economies' advantages in commodity manufacture and high-skill economies' skills in innovation and design. In the UK for example, American companies use Japanese production methods and British designers to create cars badged under a German brand – drawing on differing but complementary strengths.

- **Electronics**

The electronics sector now occupies a strategic position similar to that of the ICT industry, as electronics have become embedded in almost all sectors and constitute a vital part of many different industries. British-based companies have pursued a value-based offering, specialising in the creation of intellectual property, business processes and service offerings, and drawing on an environment that offers access to the right skills and infrastructure for doing business.

- 4.3 In all of these cases, a strong base of management expertise works closely with interdependent sectors to procure the project, create the business model, design the process, manage change, balance risk, and direct the operations which are then delivered across the world:

- 4.4 The global positioning of these industries therefore supports the view that the role of UK business is in the value-add as opposed to the commodity section of the global supply chain, and we believe this synergistic model will allow the ICT industry to develop its economic and strategic contribution.

5. Our cornerstones

5.1 Successful implementation of this synergistic model is dependent on the actions of the industry and other key stakeholders, including in the public sector. Intellect has identified four mutually dependent factors which it believes will be cornerstones of the industry's future development:

5.2 Maintain excellent relationships with other industries

A key element of the sector's success to date has been the synergistic relationship between ICT suppliers and the industries which use ICT for competitive advantage. Currently the area inside the M25 is home to more expatriated private sector talent than any other comparable world city – building on this is critical to future success.³ Key success factors include:

- ensuring that the UK has an attractive economic and regulatory environment, with flexible labour laws and adequate communications infrastructure to support many different types of global business
- developing the industry's ability to work with its customers and promoting the concept of joint and collaborative working, this is part and parcel of the sector's growing role as a partner in delivering business outcomes rather than as a traditional supplier of commodity
- developing an effectively aligned UK supply chain, which includes SMEs
- recognising that relationship management is an ever more critical core competence – whether managing "upwards" to the customer, "sideways" to business partners or "downwards" to commodity suppliers

5.3 Improve professionalism

Bettering the industry's reputation and standard of behaviour is key to establishing the sector as a desirable career and responsible partner, as well as improving performance and increasing customer satisfaction.

As part of the ProfIT alliance, Intellect's recent work on professionalism highlighted seven key aspects, each of which is a vital component of developing a professional organisation. They are:

Integrity: Companies must enforce trustworthy, honest and ethical behaviour.

Processes: Professional organisations ensure consistency and accuracy through processes which reward good performance, disseminate best practice and analyse problems quickly.

People: Productive and professional people must be nurtured by an environment conducive to effectiveness and engagement.

Communications: Common understanding is only reached through good communication. Establishing trust and gaining insight requires a clear two-way dialogue both internally and externally.

Relationships: Well-established relationships deliver results and create trust, and rely on effective governance, relevant expertise and a focus on building understanding.

Improvement: Professional organisations adapt and thrive based on their analysis of and ability to adapt to changing environments and circumstances.

Citizenship: Recognising the wider community around the ICT sector and actively contributing to environmental, industry, legal and charitable work.

³ The Innobarometer 2006 survey reveals that the most innovative companies in the EU "work in a cluster-like environment, enjoying close cooperation with other enterprises in the region and strong ties with the local business infrastructure".

5. Our cornerstones (continued)

5.4 Develop talent

Increasing industry's human capacity requires action by both business and government, including the management of long term sociological and educational influences, which aims to:

- improve the status of ICT as a profession, emphasising the "business" aspect and increasing the sector's attractiveness to current and future generations of students.
- increase the development of numeracy and technical skills but also, vitally, management capability – producing more business-aware technologists from schools and universities, and ensuring that all of them have a wide set of business skills which enable them to apply technology profitably.
- manage knowledge effectively to benefit from experience – e.g. capturing and perpetuating the body of knowledge already embedded in the industry.
- support continuing professional development to ensure a constant supply of high quality, well-rounded, ICT-aware business managers.

5.5 Foster SMEs and innovation

Successfully leveraging industry's capability requires engagement with the large number of ICT SMEs, who are responsible for many of the innovative offerings and business processes driving the sector today. Suppliers, customers and policymakers must:

- recognise the innovation that SMEs can bring to project development and delivery
- encourage greater understanding of SME business drivers and their specific needs at different stages
- successfully manage SME partnering to benefit from rather than restrict their flexibility and creativity
- ensure that opportunities for funding, grants and tax incentives are easy to understand, accessible and not overly resource intensive
- consider the greater cost and resource burden that regulation and compliance places on SMEs, and ensure that new regulation is sensible, and not duplicative

6. Conclusions

- 6.1 We believe that the ICT industry and its customers must:
- work to nurture collaborative and mutually beneficial relationships with related industries
 - establish itself as a profession with clearly defined standards of skills, behaviours, ethics and quality, so that it can retain the confidence of the market and attract talent and investment
 - develop talent to meet future needs of the market through education, attracting graduates and professional development
 - create an economic environment which encourages the industry to develop, including fostering the SMEs that create innovative business models and service offerings

7. Next steps

- 7.1 Intellect believes that moving to the next stage of the industry's evolution will require engagement with the public, private and third sectors, and looks forward to discussing these conclusions in greater depth with customer, policymaker and supplier stakeholders.

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The logo for Intellect, featuring the word "intellect" in a lowercase, sans-serif font. A small green triangle is positioned above the letter "i".

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