NI6 Annexes

Annex 1	NINJ evidence from each organisation
Annex 2	NINJ policy examples and case studies
Annex 3	Customer segmentation information
Annex 4	Diagrams illustrating size and technology readiness of customers who use the NI6 (blobs)
Annex 5	Innovation Radar taken from Kellogg"s Innovation Radar
Annex 6	The Innovation Infrastructure Challenge Pot
Annex 7	Customer journey maps
Annex 8	Newsletter mock up
Annex 9	potential logos
Annex 10	types of customers/customer needs
Annex 11	Engagement with business – depth vs volume
Annex 12	Customer interactions
Annex 13	Economic evidence
Annex 14	The international picture – commissioning questionnaire
Annex 15	Summary of each of the NI6 organisations
Annex 16	Project team and stakeholders
Annex 17	Commissioning questionnaire to NI6 organisations
Annex 18	Piloting a secorally tailored NI6 offer – London Design Week

Annex 1: NINJ Evidence from each organisation

The Intellectual Property Office

IPO had ***no formal involvement in the genesis*** of the NINJ structure. However, once the work-streams had developed the IPO ***engaged with several areas*** - Digital Britain, Low Carbon and Life-sciences - at a relatively early stage. This indicated at least a moderate recognition of the relevance of IP to the wider economic and growth agenda. Engagement with Advanced Manufacturing has tended to be reactive - but this was built on the precedent of involvement in the initial AM strategy.

Digital Britain

IPO were engaged ***early*** in the policy development leading to the report. They also have ongoing involvement in the development of copyright legislation in the Digital Economy‟s Bill. In BIS there is high level acknowledgement of the relationship between the IP framework and the digital economy, reflected in the embedding of the IPO‟s copyright strategy in the creative industries section and under “skills” and “digital security”. The report details three actions for IPO on (i) scope of amending copyright law in relation to distance learning; (ii) preservation of archive materials; consultation of legislative reform on orphan works; and (iii) key aspects of the copyright strategy. The latter focuses on the need for legislative change to deter online copyright infringement; recognition of enforcement issues and criminal sanctions for copyright piracy and development of new business models to maximise monetary rewards for access to content. Customers here are digital businesses and consumers - with whom IPO has broad engagement. .

Low Carbon strategy

IPO was ***engaged early*** in the development of this paper and the IPO‟s International Directorate chair the Whitehall committee on IP and Climate Change with DECC. The section “strengthening the innovation infrastructure” outlines in detail IPO‟s initiatives at both a systems and framework level. The IPO has developed rules within the patent legal framework to enable the accelerated processing of patents relating to green technologies. At a systems level the IPO is pursuing bilateral relationships with emerging economies to enable more effective IP agreements in international collaborations. The major stakeholders are overseas but also within the UK knowledge transfer community.

Office for Life-Sciences

IPO ***were engaged*** in the development process of the OLS strategy. The key IP action in the blueprint relates to the tax environment for IP licensing. This issue is led by HMT/BIS who called upon the IPO for information but IPO were ***not a main player*** in the development of the policy, although as this policy gathers pace IPO is being asked to help with ***technical advice*** about patents. IPO had a ministerial-led project on IP and insolvency that was contemporary to the development of the OLS. Concerns about “mission creep” may have

marginalised the role of the IPO in initial OLS structural discussions but as the blueprint delivery processes have developed, the IPO has engaged with the BIS Bio-Science unit‟s work on IP commercialisation by SMEs and related work on IP.

Advanced manufacturing and low carbon vehicles
IPO had a policy action in the original advanced manufacturing strategy which arose from its BERR-led engagement. But there is ***considerable room for engagement*** around this and the low carbon vehicles theme as present levels of involvement are ***negligible.***

General business activities and NINJ

Formulation of IP policy takes place under "framework" and "systems" which underpin the work of all the IPO‟s functions. The issues surrounding IP ***legal frameworks***, e.g. international patent law harmonisation and the term and scope of copyright laws, are central to the IPR policy directorates and also International Directorate. The Innovation Directorate is concerned with ***IP systems*** - how IP is used in business and how much value it brings to businesses and the wider economy. Much outreach work is focussed on raising awareness of IP issues among SMEs and about knowledge transfer between public and private sector organisations which are ***topical and common areas across NINJ areas.*** There is also a "business as usual" dimension in respect of its ***IP enforcement*** activities and policies particularly on the "National IP Crime Strategy". This involves a business and consumer ***education*** element about protection of IP assets and how to enforce them.

Additional ways to support NINJ

There is a relationship between IP rights and company performance and productivity. Whilst the question needs to be resolved as to whether this relationship is causal, it demonstrates that IPRs, patents and trademarks, can be used as ***markers of innovative activities***. There is ***scope to call upon existing IPO capabilities*** and perhaps to ***develop new ones*** that could contribute to the development of NINJ initiatives e.g. the ***IPO's Patents Informatics Team*** maps and spots trends in emerging technologies.
IPO works closely with TSB and sits on their emerging technologies committee – they have developed a tool-kit to enable KTNs to ***identify disruptive technologies***. More broadly, the patent administration function provides opportunity to ***obtain information on patenting across all sectors***. With over 200 patent examiners (minimum graduate level entry, many with PhD‟s), the IPO represents a ***repository of highly-specialised technical expertise across all major sectors*** with sophisticated searching and classification tools at their disposal. E.g. the life-sciences patent group provides a regular report of patenting activity on stem cells to the National Stem Cell Network. The application of patent data and expertise to key NINJ areas may offer ***useful insights and provide synergies with other information.***

There is scope to use t***rademarks*** to track innovative performance, particularly as research indicates strong correlations between trade mark registration and growth. TM classification systems offer the opportunity to ***analyse trade mark trends*** among different sectors and at different stages within the development process and delivery of innovative products.

The Design Council

DC has been involved in some NINJ activities but not other areas. They were not involved in genesis of the overall strategy.

Advanced Manufacturing Strategy:
DC has provided significant input. The Advanced Manufacturing document features a high level of design activity and the strategy recognises that the UK's leading industrial companies excel in design and that competitive advantage enjoyed by the UK's leading industrial companies is attributed to design, skills, innovation and creativity. The jobs created in Advanced Manufacturing come from highly skilled areas such as R&D, product design and professional support services. A package of support announced includes a Diploma in Manufacturing and Product Design and the strategy includes two "Designing Demand" case-studies: Ceres Power and Axon Automotive.

Business as usual activities in NINJ areas
The Design Council is the national strategic body for design. Its mission is to inspire and enable the best use of design to create a more competitive, innovative and sustainable nation. The overall commitment by NINJ strategy to high level skills, creativity and technological change chime well with DC's core activities focused on using design to enable innovation in business and the public sector. DC programmes offer coaching, rapid prototyping and knowledge sharing. Over the last year activities included:

Helping SMEs to innovate through design
DC delivers intensive advice and mentoring for business leaders that helps them assess design challenges and opportunities across their operations. The programme, called **Designing Demand**, is delivered through a roster of Design Associates who are all trained and vetted by the Design Council. **Designing Demand** is part of Government Solutions for Business portfolio and is being delivered by RDAs in seven English regions, over 1,500 SMEs have participated and early indications are that the programme has helped them achieve increased sales, turnover, profit and market share. In Yorkshire, GVA was higher for Designing Demand than any other government business support initiative. [1] 9/10 businesses that used the most intensive mentoring service said the design projects were critical to their success. In Yorkshire and Humber over 120 SMEs have seen a combined increase in turnover of £20 million and the creation or safeguarding of over 400 jobs to date.[2]

Enabling smarter procurement through design
DC has pioneered a **rapid, low-cost method of open innovation** for government departments that is more effective than traditional design procurement. This has been used to tackle issues such as cutting crime and reducing health care acquired infections where innovative solutions were proving hard to find. DC's NDPB status is a key strength in this work. They

[1] Impact of RDA spending, PricewaterhouseCoopers LLP (2007)

[2] Source: Design Council evaluation of Design Works (now Designing Demand) programme in Yorkshire, Ekosgen, 2009

are an independent voice that can challenge the status quo within government and commercial organisations where wider issues are at stake than their own commercial success; we act as a „neutral zone" that bridges the policy world and people on the frontline.

Accelerating scientific innovation by design
DC is also coaching at university technology transfer offices **in our Innovate for Universities** programme. In June 2009, the winners of **Innovate for Universities**, a DC competition for TTOs were announced - Aberdeen, Cambridge, Leeds, Nottingham, University College London and York. They are each receiving intensive design mentoring for 12 months for four fledgling technologies each. Funded by BIS and HEFCE, the aim is to raise awareness of the value of design to universities in developing and commercialising technology projects.

Supporting higher level skills & knowledge exchange
DC co-ordinates a **Good Design Practice** campaign to promote continuous professional development in the design industry, including key skills for the future such as sustainable and service design. We are promoting multi-disciplinary collaboration in universities, linking design education with business and science though a **Multidisciplinary Design Network** – a collaboration between Design Council, NESTA and HEFCE. DC has helped negotiate the funding of multi-disciplinary centres and courses and a learning network in higher education. Notable successes include the establishment of **Design London** and **C4D** (between Cranfield and University of the Arts).

Additional ways to support NINJ

Supporting low carbon economy
DC is scoping a **new design award** scheme that promotes a new definition of „good design" that puts form, function and sustainability at its heart.
DC is promoting the use of **sustainable design** in community innovation projects including the Dott Cornwall initiative and a project with a water utility.

Helping business enter new overseas markets
Dc and UKTI are discussing a possible partnership to help companies going through Designing Demand access overseas markets.
Supporting early stage technology companies
Designing Demand - Innovate should be more widely rolled out in the regions, with greater identification of suitable early-stage technology ventures.
Supporting life sciences and pharmaceuticals
Building on the success of Design Bugs Out, a design-led approach could be used to help the NHS be more effective as a champion of innovation.

UKAS

UKAS has not been engaged with the strategy but does contribute to a number of its priorities i.e. innovation, global trade, joined up Government and better regulation. UKAS accreditation is a valuable tool to deliver market-led solutions to public sector requirements in support of the key NINJ objective of using „markets where possible, state where necessary". For emerging technologies UKAS generally follows BSI"s lead. Demand for conformity assessment and accreditation does not usually emerge until standards are available (though there have been exceptions to this rule). UKAS has had limited contact with the Technology Strategy Board.

National Physical Laboratory

NPL was ***not directly involved in developing NINJ strategies*** and is not mentioned in any of the current strategy documents - but is keen to contribute in future. NPL believe their ***support for NINJ is under-utilised*** and there are ***opportunities*** for exploiting it more fully: "NPL is BIS" largest directly-owned S&T asset".

NPL supports innovation and quality assurance across a wide range of technology-based products and services relevant to NINJ, including ***automotive, medical technologies, communications, advanced manufacturing, energy technologies, materials processing, and defence and security systems***. NPL supports the approach "to focus more on, and prioritise, areas where the UK holds – or realistically can gain – lasting advantages". NPL"s focus areas reflect areas of strength in UK technology but are also key to tackling major ***challenges*** such as climate change and an aging population. They reflect priorities of the draft ***NMS Strategy*** – itself based on an analysis of top-level policy objectives of government carried out by NPL early in 2009.

Business as usual activities in NINJ areas

NPL believes its ***facilities and capability*** provide part of the essential infrastructure for the implementation of NINJ i.e. required for the exploitation of S&T for a low carbon economy, digital communications and advanced manufacturing and for safe and effective development of healthcare technology. NPL does – and could - facilitate the rapid exploitation of new S&T in NINJ areas via its ***current*** work on

- Open innovation - participation in collaborative research projects with business and universities
- Publication in scientific literature
- Embedding best practice in documentary standards (BS, EN, ISO)
- Embedding new S&T in next generation instrumentation - important for product and process innovation
- Exploitation of NPL"s own IP via licensing and spin-outs
- Supporting better regulation (health, safety, environmental) to give consumer confidence (e.g. nano)
- Ensuring UK goods accepted abroad without expensive re-testing
- Improving workplace skills via knowledge networks and training.

Additionally NPL wishes to see an ***expanded national mission*** that offers:

- Capability (centred on measurement, standards, delivering confidence and underpinning innovation and knowledge diffusion)
- A trusted independent source of expertise and advice to government and business
- New role as catalyst for improved communications across sectors
- More support for UK skills by generating future STEM and incubating business-relevant talent

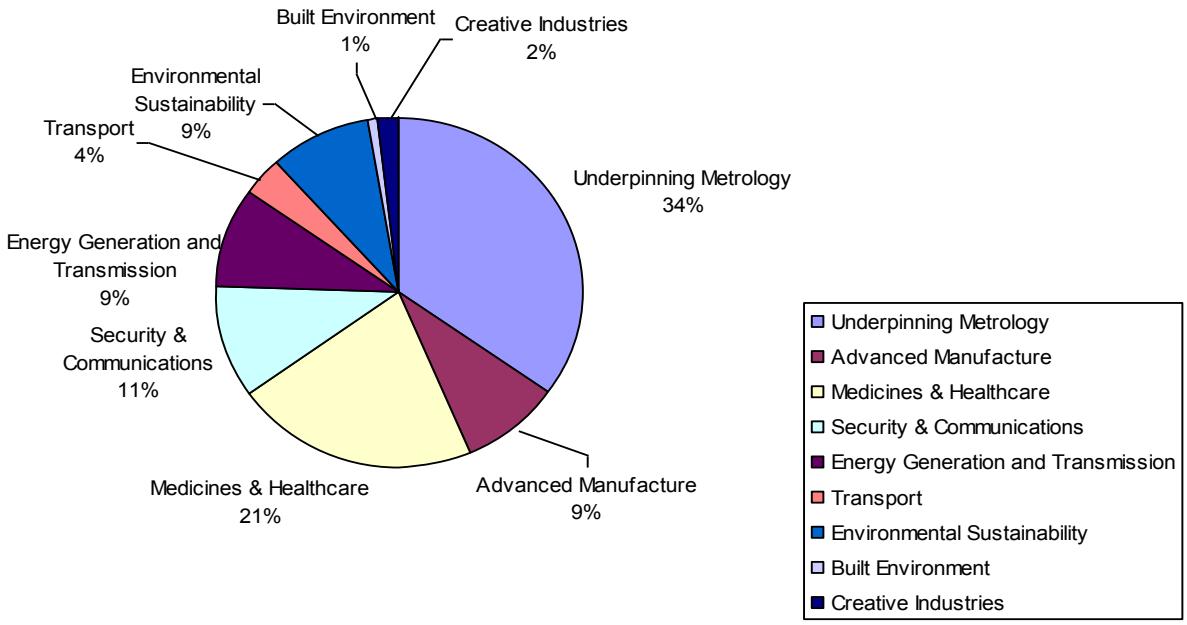
- Support for regulation and international standards to enable early market entry for UK based businesses
- A cost-effective approach for addressing S&T national challenges
- International leadership in chosen areas providing competitive advantage for UK business and political influence for UK government
- Demonstrable return-on-investment in terms of economic and social benefit.

The NMS programmes are formulated on the basis of identified market need based on technology foresight, road-mapping and market analysis. The nature of the NMS requires NPL to work across government, business and academia and across scientific disciplines. NPL has worked with BIS operational researchers, economists and consultants to establish processes for assessing the potential benefit of proposed programmes and evaluating their impact post-completion. This targets NPL"s expertise on the areas highlighted in the NINJ and associated strategies.

National Measurement Office

The NMS was ***not given the opportunity*** to make a contribution to the development of the NINJ Strategy. Nevertheless, the ***technology roadmaps*** that underpin future activity across the NMS were part of the evidence base used by the Technology Strategy Board to identify technology application and national challenges work. This work led to the identification of the NINJ sectors. In terms of „***business as usual'*** activities which affect NINJ areas of the economy and associated strategies, the following chart shows the sectors of the economy that principally benefit from NMS projects.(NB many projects have multiple users so this significantly underestimates the impact).

Breakdown of NMS effort in Application Area – Dec 08



The NMS strategy consultation has set out the work NMIs in terms of the national ***challenges*** defined by the Technology Strategy Board – which ***align well with the NINJ sectors***. (However, it is worth noting that much of the NMI work is driven by sector ***regulation.*** In LGC‟s case, this is food, pharmaceuticals, biopharmaceuticals, medical devices inc. diagnostics, environment etc based on quantity and quality, safety and efficacy. In NMO‟s case this is the Weights and Measures legislative framework.)

Low Carbon Industrial Strategy

NMS work affects the LCIS in two ways - *Energy and Sustainability.* In the former the technologies and processes used in the energy sector are *underpinned* by measurement standards and capabilities addressing matters such as the energy content and purity of fuels, flow measurements, materials and fluids‟ properties in harsh environments and measurement of the operational environment of energy systems and components. NMS laboratories have relationships with the R&D departments of major fuel

producers, energy generators and distribution companies – and NMS capabilities are applied with major, highly visible, impact. The NMS responds to - and anticipates - future requirements in this rapidly evolving sector. Expertise helps to increase the *speed to market* of low carbon technologies such as organic photo-voltaics and carbon capture and storage. The NMS will:

- For energy ***consumption and energy efficiency*** - provide underpinning measurement.
- Provide measurement to support the ***development of low C technologies*** (e.g. carbon capture & storage, bio-fuels, wind and marine energy, fuel cells and hydrogen energy)
- Provide confidence in data to support ***Emissions Trading System and carbon labelling,*** *and f*acilitate ***market acceptance*** of low-C technologies via development of standard methods of proving technical performance (e.g. for materials)
- Develop **in situ monitoring techniques** to improve efficiency and extend the operational lifetime **of fossil fuel and nuclear plant, and p**rovide standards for purity, metering and safe **transportation of fuels** and emissions.

Achievement of UK objectives on Greenhouse Gases depends on the development of a validated energy accounting framework and standards, to enable businesses and government to understand their contribution to GHG generation and underpin carbon trading and regulation. The NMS will:

- Provide methods for characterisation of materials - to support whole **life-cycle analysis of products**
- Bring **confidence** in more sustainable products, materials and processes - by providing objective methods of performance evaluation,
- Enable **waste characterisation** to allow safe, secure, legal disposal
- Establish more confidence **in Earth Observation satellite data** by introduction (internationally) of long-term reference methods.

Healthcare

Measurement can support pharmaceutical industries through its application earlier in the development pipeline, to improve effectiveness and safety. It can improve the speed, reliability and cost of diagnostics to underpin accurate and reliable clinical decisions and treatment regimes. It can remove technical barriers and mitigate regulatory barriers to the exploitation of novel interventions. It can also support Government revenue protection. There will also be a greater preparedness for future health demands and new disease threats. The NMS will:

- Underpin the assurance of **consistent delivery across the NHS** through good **measurement practice,**

- Enable new drugs, therapies and assistive technologies to be brought to **market quicker** and at lower cost through provision of metrology that underpins regulation,
- Support **reduction in animal testing** through validation of new types of testing protocols, to the satisfaction of regulators,
- Develop protocols/standards to enable **infectious disease detection** technologies to be deployed and used confidently.
- Develop performance testing standards designed to keep **less able people safe and secure in their own homes**.

Digital Economy
Mobile telecoms, satellite communications and high data-rate processing all demand leading-edge metrological capabilities to enable competitive, reliable, quality, safe and regulated services. The NMS programmes support

- A network of accredited test and calibration laboratories that issue over 100,000 certificates each year,
- Companies developing new instrumentation and communication equipment,
- Companies that operate the UK‟s communication networks.

Over the next five years the UK must upgrade its wired and unwired communications and broadcasting networks to provide capacity to meet the growing demand for high bandwidth services. This will provide opportunities for ***UK instrumentation and communication system suppliers and*** will bring new measurement challenges requiring higher speed instrumentation, higher performance antennas, higher speed synchronisation, tighter control of the electromagnetic spectrum, and more resilient systems and data authentication. ICT tools, computer models and simulations are of increasing importance to business, particularly for product, process and service design. Capture, manipulation, storage and communication of large data sets are also of great importance to business and public services. NMS programmes can develop protocols to validate these ICT tools, computer models etc across the UK economy to keep it globally competitive. The NMS will:

- Underpin the specification and reliability of next generation communication systems via measurement ,
- Support global systems relying on time for synchronisation and tagging of transactions,
- Validate confidence levels in software modelling, simulation and data processing.

Security
The NMS can provide methods and standards for *trace detection* of chemical, biological and radiological agents *in the field*, and assess the performance and interoperability of *personal identification and security imaging technologies. It can p*rovide methods for validating performance of *sensing and incident detection systems. It u*nderpins the operation/safety of defence

systems via measurement, testing and reference materials. It also will develop techniques to *identify counterfeit* goods, e.g. pharmaceuticals.

Further support for NINJ, Feedback to Policy Makers
The NMIs deal with 1,000s of cutting edge businesses every year and as a result have a wealth of knowledge about innovating companies. This could be used by BIS to help ***inform policy developments*** and ensure BIS has access to current feedback from technology based businesses. There would be benefits from increasing the level of flow of industrially relevant information between NMS, TSB and BIS, including more robust data from business and potentially less duplication of effort. Information about technological developments from business could help shape the future direction of Government support for innovation. The TSB uses a challenge led approach to innovation and feeding data back to them could help shape future „challenges" or provide an element of the collective information necessary to effect solutions. .

Acting as a broker
The NMIs are uniquely placed to provide an ***interface / brokerage service*** between industry stakeholders, academia and government, as they work across all these areas. They could ***identify businesses*** that would benefit from TSB or other innovation support from other bodies in the eco-system, and the RDAs business support activities. At one end of the spectrum this could be a simple as ***signposting*** businesses around the eco-system. At a more active end NMIs could broker projects that might be suitable for TSB funding. Their unique position means that they are well placed to act as a „broker" between business, academia and TSB.

Better alignment with the Technology Strategy Board
Whilst the NMS strategy sets out an approach based on the national challenges is there more that could be done to ensure the NMS focuses on the Government"s priority areas? TSB supports projects targeted to meet national challenges and there may be benefits to ensuring the NMS work is complementary to TSB funded activity. An argument could be made to enable the NMIs to bid to TSB for funding to undertake work which would further TSB"s objectives. The current arrangement means it is hard to do this.

Better alignment with Research Councils
Arguably research undertaken within the NMIs is in the same category as projects in academic institutions that attract RC funding. The UK is actively prioritising effort, e.g. in NINJ sectors, so it might help this concerted effort if the NMIs were brought into the research picture more transparently. It would also reduce potential duplication. At present NMIs must partner with an academic institution to get RC funding. It might be more cost effective if they bid directly to RCs. The risk is that disconnecting research from the NMS strategy and funding could result in a disconnected portfolio at the NMIs.

British Standards Institution

BSI has had ***no direct input to the formulation of NINJ*** – but they do not see this as a BSI role. But there are ***standards relevant*** to the NINJ agenda across all subjects e.g. Digital Britain, Low Carbon Industrial Strategy, Life Sciences Blueprint; Jobs of the Future. BSI are ***building close links*** with TSB and the NINJ sector teams in several of these areas.

Low Carbon Industrial Strategy & Office for Low Emission Vehicles
BSI has produced or is working on several standards and specifications that support the aims of LCIS and OLEV including

- PAS 2050, which assesses the life cycle greenhouse gas emissions of goods and services
- PAS 2060 which will ensure a consistent and comparable approach to carbon neutrality claims.
- Work with UKTI, DEFRA, DECC and others to produce a publicly agreed specification for low-carbon technology terminology. Clearly defined terms will increase consumer and business confidence in the quality and use of low-carbon products and ensure UK is well placed to influence EU and international standards.

Office for Life Sciences
BSI has also been engaging with the Office for Life Sciences and the work they carry out on standards for regenerative medicine, biometrics and nanotechnologies have direct relevance for this area. The nanotechnology committee for example has produced nine documents covering safety, commercialisation, IPR and procurement which provide useful support for new businesses. Similarly the work of the biometrics committee put the Identity and Passport Service in a stronger position when contracting for biometrics services, realising significant savings. New work planned includes a specification for critical quality parameters for cell therapy products.

Financial Services
With regard to professional and financial services, BSI was a major contributor to the development of the ISO 9001 Quality management standard and has recently brought together key stakeholders from the UK financial services sector to develop a standard for financial compliance teams. The standard will set out a common methodology, process and good practice which can be adopted by compliance teams in retail and wholesale financial firms. BSI will also look to support to agenda set out in “Supporting Innovation in Services” (BERR/DIUS, August 2008).

Going forward, BIS is working with BSI to determine other emerging and innovative technologies where such work could have an impact. BSI is being encouraged to map potential work areas onto the key NINJ and TSB identified sectors and look at ways their work can align more closely with BIS‟ strategy

Annex 2: NINJ examples and policy case studies

Completely Secure Communication (NMO)

Guaranteed unconditional security is of enormous interest to financial institutions. Quantum cryptography offers the protection of a connection that cannot be tapped undetected; it works because information is transmitted in the smallest units of light energy – photons. Photons cannot be cloned – so an eavesdropper on a secure transmission can be immediately detected. The NMS supports research in collaboration with universities and business to give the UK a lead in developing international standards here, which will give users confidence and open markets for suppliers.

3G Base Station Antenna Testing (NMO)

Careful planning was critical to the success of third generation (3G) mobile phone networks. Operators relied heavily on planning tools to develop an infrastructure that was robust, flexible and cost effective.

3G network planning relied heavily on data used to calibrate the planning tools. 3G networks used a new type of variable tilt antenna. The antenna range at NPL delivered better information about how the antennas would behave- enabling substantial efficiency savings through: fewer base stations in rural areas, lower masts, and less interference between urban stations. Evaluations show NPL"s calibration data improvements equate to a 1% one-off saving in network capital costs – equal to saving £50million. The total cost of the facility providing critical measurements is estimated to be ~ £2million. Even if the facility were used for nothing else, this gives a benefit/cost ratio of 25:1.
Exports - Authoritative, independent endorsement of systems to support export of environmental monitoring instruments.

Environmental Monitoring with Confidence (NPL)

NMS programmes, through NPL, supported the Environment Agency to establish their environmental Monitoring Certification Scheme (MCERTS). Initially developed to help operators to reliably self-monitor stack emissions using certified continuous monitoring systems, but is now used to monitor emissions to air, land and water. Benefits include:

- International recognition of certifications
- Certified instruments shown to provide data compliant with EU Directives
- User Confidence that instruments/operators are reliable and conform to performance standards
- Cost-effective collection of accurate, reliable emission data for regulators, Government and the public

NINJ Opportunity case study (NPL)

NPL to deliver confidence in carbon accounting by creating a measurement and standards infrastructure to underpin the move to a consistent global "carbon price". UK pre-eminence in the quantification of emitted and embedded carbon would help secure the UK as the centre of the world carbon market. This is part of a broader vision to establish at NPL a *Centre for Carbon Metrology*, which would additionally provide confidence and uncertainty improvements in data used to model and predict climate change, and support the development and performance verification of new low-carbon technologies.

Overseas examples (NINJ style) (NPL)

The USA National Institute of Standards and Technology, supports the US government well beyond measurement, including S&T related policy development. NIST is in the Department of Commerce but is funded directly by other US government departments who exploit its capabilities.

In Germany, the Physikalisch-Technische Bundesanstalt, operates an overseas aid programme, providing German standards, instrumentation and advice to developing countries.

Developing Domestic Wind Turbine Market

TUV NEL is becoming the first UKAS accredited ISO 17025 organisation for the testing of small wind turbines suitable for domestic and light industrial applications. This means the NMS will be instrumental in helping Government to introduce alternative energy generation devices into the consumer market. Under the Microgeneration Certification Scheme consumers are offered reductions on the installation costs of these devices through the Low Carbon buildings programme. However, in order to qualify for these grants the device must meet certain requirements and be certified accordingly. TUV NEL is attaining accreditation through UKAS as a certifying body so it can approve these devices which can then be sold in the marketplace.

Incubator for Low Carbon Energy and Transport

NEL in collaboration with Scottish Enterprise has been running an incubator specifically aimed at innovation in the low carbon energy and low carbon transport arenas.

Carbon Capture and Storage (CCS)

NEL is working with industry to establish CO_2 measurement options. Accurate measurement throughout the CCS process is essential for verification and to mitigate CO_2 leakage. There are challenges here: some current technologies have limited capability in CCS applications and so may struggle to meet tight measurement uncertainty targets expected in forthcoming legislation and in EU Emissions Trading Scheme requirements. TUV NEL will assist industry to make the right metering choices and will work with EU/UK policy makers/regulators to ensure measurement solutions are in place. Regulatory monitoring and reporting guidelines must be clear, comprehensive, realistic and achievable. This will help position the UK as European and global leaders in CCS.

Incubator for Low Carbon Energy and Transport

NEL in collaboration with Scottish Enterprise has been running an incubator specifically aimed at innovation in the low carbon energy and low carbon transport arenas

Standardisation documents in the area of regenerative medicine

LGC has been instrumental in working with BSI and stakeholders through BSI‟s new Regenerative Medicine Committee (RGM/1) to establish a UK strategy for the development and use, by industry and other stakeholders and their networks, of formal standards and other standardisation documents in the area of regenerative medicine. PAS 83 - Guidance on codes of practice, standardised methods and regulations for cell-based therapeutics, from basic research to clinical application, and PAS 84 - Regenerative Medicine Glossary, have been produced to date. International recognition of these documents has precipitated international harmonisation efforts and is influencing international legislation outside Europe‟s Regulations.

Design Out Crime (DC)

The collaboration with the Home Office and the Design and Technology Alliance Against Crime continued, to promote crime-reducing innovations and encourage others to „think crime‟ in the first stages of design, planning and product development. Recent **Design Out Crime** initiatives include a project to develop a safer British pint glass in a bid to crack the problem of glasses being used in violent assaults and a £400,000 Mobile Phone Security Challenge for designers and technology experts to create „crime proof‟ mobiles.

Design Bugs Out (DC)

A collaboration with the Department of Health and the NHS Purchasing & Supply Agency, **Design Bugs Out** was a national competition for teams of designers and manufacturers to design and prototype new furniture, equipment or services for hospital wards to help reduce Healthcare Associated Infections. Almost every one of the 11 prototypes delivered in March 2009 is now making its way to market.

Design and University Technology Transfer Offices (DC)

Evidence from Design Council pilot projects with Oxford Isis Innovation, the technology transfer office at Oxford University has shown that small amounts of spend on design at the onset of the technology transfer process can result in large gains. By matching research teams with a senior product designer, the pilot aimed to help commercialise three early stage technology projects. One project that took part in the project raised £750,000 of seed finance for revolutionary smart metering technology for businesses and homes. "We didn"t get the design intervention we expected. We thought we would get support developing the design brief for a prototype. We actually got something much more valuable – a lot of customer and investor interest for a very small amount of money." David Baghurst, Head of Isis Enterprise, Oxford University

Community Design – Innovation (DC)

Dott Cornwall is engaging with communities across the peninsula to be involved in the County"s change, working with development agencies, local and organisations and communities. Dott Cornwall projects are receiving funding from the European Regional Development Fund (ERDF) and European Social Fund (ESF), and other innovation funds to across themes including: transport, ageing population, social care and education.

Following on the success of Dott 07 in the North East of England, Dott Cornwall was established in June 2009 as a partnership between Design Council, Cornwall Council and University College Falmouth, with other key supporters including the Technology Strategy Board and SWRDA. Dott will tap into the creativity and ingenuity of local communities and provides them with the opportunity to shape their future and comes at a time when there is significant investment into the infrastructure and overhaul of services across Cornwall

Horizon Scanning (IPO)

There is a relationship between IP rights and company performance and productivity. Whether or not this relationship is causal, it demonstrates that patents and trademarks can be suggestive of innovative activities. *[Comment: the first sentence doesn't entail the second, as drafted. IPO is currently commissioning research on relationship between IPRs and innovation (as opposed to company performance).]*There is scope to call upon existing IPO capabilities and perhaps to develop new ones that could contribute to the development of policy initiatives e.g. the ***IPO's Patents Informatics Team*** maps and spots trends in emerging technologies. IPO works closely with TSB and sits on their emerging technologies committee – they have developed a tool-kit to enable KTNs to ***identify disruptive technologies***. More broadly, the patent function provides an opportunity to obtain information on patenting across all sectors. With over 200 patent examiners (graduate entry, many with PhD"s), the IPO represents a ***repository of highly-specialised technical expertise across all major sectors*** with sophisticated searching and classification tools at their disposal. E.g. the life-sciences patent group provides a regular report of patenting activity on stem cells to the National Stem Cell Network. The application of patent data and expertise to key horizon scanning and policy areas may offer useful insights and provide synergies with other information. There is also scope to use trademarks to track innovative performance, particularly as research indicates strong correlations between trade mark registration and growth. TM classification systems offer the opportunity to ***analyse trade mark trends*** among different sectors and at different stages within the development process and delivery of innovative products.

Annex 3: Customer segmentation information

Methodology in preparing tables

The information given in this Annex is based on information supplied to BIS from each of the NI6. While not exhaustive, the tables are representative of how the different facilities view their customers.

With the exception of the NMO, who provided the initial table template, the remainder of the organisations provided a written report on their customers. Information was extracted and placed into the tables to allow for comparison.

For the IPO, the groups in italics are for the categories IPO used to describe services, although they also expanded their answers in their written report which have been added into the table.

Tables are provided for:

- BSI
- Design Council
- NMS
- NMO
- IPO

Customer segmentation table for BSI

Service	Who are customers	How many	Segmentation	Journey (how they enter system)	Nature of transaction/ enquiries	Benefit to stakeholder/UK
Standards	SMEs, to multinational business Plus Government (£900K last year)		Development and publish standards in all areas from IT to regenerative medicine and break couplings and management systems	Web - BSI Email Phone Personal knowledge Committees etc Through Business link website Through regulation (e.g. construction) Procurement ISO 8901	Purchasing standards, expert help with drafting and delivering private company and consortia standards, technical advice on import and export regulations and requirements, assistance with standards collections management and awareness seminars and workshops.	27,000 British standards successfully implement manage business critical decisions and achieve excellence that is recognised globally improve quality of business
Certification	As above		As above	Third party and as above have to have bought standard to get it certified.	one of the world"s leading providers of training, information and knowledge on standards, regulatory approval, business improvement	Ability to move into new markets
training	As above Plus committee members		As above	As above	Purchasers – to implement Committee – to learn	Understanding of the certification and standards and ability to move into new markets

Customer segmentation table for Design Council

Service	Who are customers	How many	Segmentation	Journey (how they enter system)	Nature of transaction/ enquiries	Benefit to stakeholder/UK
Business Transformation Programme Designing Demand	SMEs 10-250 employees SMEs (min 50 employees) SMEs technology start ups	1500	"Generate" "Immerse" "Innovate"	Local Business Link then local delivery partner and network of 46 Design Associates.	Face to face mentoring and support using a suite of centrally developed tools	1500 SMEs helped and have increased sales, turnover, profit and market share 120 SME in Yorkshire and Humber – increase turnover of >£20 million and safeguarded 400 jobs
Smarter procurement Design out crime	Government depts. Home office and Design and Technology alliance				Develop safer British pint glass Crime proof mobiles £400000 challenge	Reduction in drink related crime using glass as a weapon Reduce fraud etc
Design Bugs out	DoH and NHS purchasing & supply agency	11 prototypes delivered	Hospital furniture		Competition	Reduced hospital infections, reduced cost of procurement

Service	Who are customers	How many	Segmentation	Journey (how they enter system)	Nature of transaction/ enquiries	Benefit to stakeholder/UK
Innovate for universities	HEI tech transfer offices	6 HEIs with 4 technologies each		Competition	12 months mentoring	Raise profile of benefits of good design – one project went on to raise £750,000 seed finance for smart metering technology
Higher level skills and knowledge exchange Good Design Practice Multidisciplinary design network Design London C4D	Design education and professionals designers university ?HE? HE		 CPD Higher education Higher education	Probably through web Multi-disciplinary centres	 Collaboration with DC, NESTA and HEFCE Courses and learning network	 Courses and learning network
Public services by Design	Local Government NDPBs Private sector RDAs					

Customer Segmentation chart for NMS

Service	Who are customers	How many	Segmentation	Journey (How they enter the system)	Nature of transaction/enquiries	Benefit to stakeholder/UK
NPL Knowledge transfer (Knowledge Services „research for business“) Calibrations (Measurement Services)	By number: Business (80%), Government (20% of which 9% central Gov't and agencies, 6% hospitals and 5% universities	1,723 measurement services customers (2008)	41% < 50 employees, 44% >250 employees Segmentation based on 300 respondents to recent customer survey: Instrumentation = 80 Research = 73 Electronic = 70 Advanced Manufacturing = 51 Aerospace = 51 Environmental = 45 Energy = 37 Healthcare = 33 Others (multiple responses permitted) A different pie-chart shows: Aerospace 21%, Space and Comms 18%, Enterprise and Inn 14%, Env	Repeat customers Word of mouth Networking & committee activities Scientific conferences, Awareness of research paper PR/media – National, trade, scientific, niche Via UKAS-accredited laboratories Via other intermediaries	Highly specific	New products through business innovations Ensures traceability with national (physical) standards.

			and Trans 14% Including academic science, standardising bodies, testing and calibration and R&D service providers, Public sector, hospitals,	Google		
NPL Training	Business 95% Government 5%	500	Advanced manufacturing, especially aerospace	PR, promotion via conferences, Word of mouth, Google	Transactional (course bookings)	One-to-one practical support, shared by customer attendees within their organisation
NPL Events (~40 per annum)	Business & government (similar to above)	>1000 attendees per annum	Broad spectrum (similar to above)	Network/ Club/ User group members, Measurement services customers Word of mouth	Technical knowledge, new technical contacts	Productivity/quality improvements, compliance with regulation
NEL Commercial contracts (to provide what?) Knowledge	Business, academic community (students)	765	Very large (e.g. GE ExxonMobil, Shell and BP) to very small. Low carbon sector, traditional hydrocarbon sector	?	Specific & technical	Conformity to internationally recognised standards, New processes and products based on innovation.

transfer Research work Test, calibration and certification			561 customers (73%) in Energy and Environmental field. Engineering students (KT work)			Better understanding by students who will use NEL/NMS in future.
LGC seminars and technical workshops (sponsored by ChemBio programme)	Majority private sector companies but more public sector organisations than for training courses as workshops are targeted at particular sectors (e.g. clinical laboratories)	Typically 1 seminar and 1 workshop per year	Approx. 350 analytical scientists from ~200 different organisations have attended a seminar/workshop since 2007. Sectors (for all training/enquiries) split as: Agriculture, Forestry and Fishing 3% Chemicals and Pharmaceuticals 22% Construction, Transport and Communication 1% Defence 1% Education - primary and secondary 6% Education – Tertiary 17% Electricity, Gas, Water supply 2% Food and Beverages 11% Instrumentation and Equipment 4% Mining and Quarrying 1%	Website and direct mailing		Improved quality of analytical results. Better agreement between results – reduced number of disputes/retests. Assist organisations in implementing a quality system and meeting accreditation/other regulatory requirements.

			Plastics and Textiles 1% Technical testing,analysis,research & development 20% Wholesale and Retail Trade 0% Other 11%			
LGC Analytical Quality Training courses	Majority: private sector companies Approx 15% public sector Small no. universities (<5%)	~1500 delegates (Jun 97-Mar 10)	Analytical chemists from ~250 different organisations Sectors split as above	Website and direct mailing of course brochures	Highly specific	Improved quality of analytical results. Better agreement between results – reduced number of disputes/retests. Assist organisations in implementing a quality system and meeting accreditation/other regulatory requirements.
LGC-measurement advice (helpdesk service)	All sectors	160 per year	Sector split as above	Website/email/ Phone Awareness via website or promotion at events	Ranges from highly specialised through to „signposting"	New product through to reg compliance

LGC-KT via ChemBio website	All sectors	10,000 unique visits per year; 1777 registrations to date		As above and via scientific literature	KT of project outputs/programme benefits	As above
LGC (MFI Programme-KT)	Private sector/ academia	48 (07-09)	Environmental Sustainability (3 companies) Energy Generation and Supply (10) Healthcare (22) Transport (5) Creative Industries (1) Security (3) Advanced Manufacturing (2) Underpinning Metrology (2)	Awareness of research/ conferences/via NMS helpdesk	Highly specialised	New product development/ regulatory compliance
LGC (Government Chemist)	Food industry/public analysts/consumers/government	Data to follow	Data to follow		Highly specialised	Informs legal judgements?

LGC Standards	Data to follow	Data to follow	Data to follow	Data to follow	Data to follow	Data to follow

Customer Segmentation table for NMO

Service	Who are customers	How many	Segmentation	Journey (How they enter the system)	Nature of transaction /enquiries	Benefit to stakeholder/UK
NMO Product Certification	Business	220 applications per annum (approx 110 manufacturers)	Weighing and measuring equipment manufacturers worldwide, Large, SMEs, manufacturing, engineering	Online application form on website.	Specific & technical	Type Approval certificate (enables entry to market)
Calibration	Local authorities and business	70	Trading Standards Departments. Medical, pharmaceutical, petrochemical industries. Large, technical, scientific	Online application form website/Users of other NMO services	Specific & technical	Ensures traceability with national standards.
Quality Management Systems Certification	Business		Business	Online application/ Users of other NMO services	Specific & technical	Conformity to internationally recognised management systems standards, quality improvement
RoHS and Batteries	Business	Many 1,000s	Manufacturers of electrical and electronic equipment	Website/Awareness campaign. Results of enforcement action or	1st Tier – Awareness	Increased levels of compliance with

Enforcement			Large and SMEs	testing	2nd Tier Detailed compliance advice 3rd tier Enforcement action 4th tier inspections	RoHS/Batteries Regulations Reduction in hazardous chemicals used in the lifecycle of electrical equipment
UK legal metrology enforcement	Trading Standards Officers	206 (Local Authorities)	Local Government	Direct through career training/LACORS	Specific & technical	Advice on policy and regulation (enables policing of market) Calibration services
Legislative Policy	Trade associations, business, pressure groups		TAs represent: Instrument manufacturers, Mainly SMEs, Manufacturers, engineering	Website/word of mouth	Specific & technical	Advice on Policy and regulation
Utilities	Manufacturers of gas and electricity		domestic and smaller industrial/commercial metering	NMO website and interactions with nominated laboratory	Specific & technical	Approval of gas and electricity meters. The MID enables a 'European Type Approval Certificate' to be

	meters			for meter testing (SGS)		issued, and the instrument can then be used in any EU Member State.
Hallmarking	Business/UK Assay Offices	Low numbers	Manufacturers and sellers of articles of precious metals	British Hallmarking Council UK Assay Offices website	Specific & technical	For business – compliance with Regulations. For consumers - safeguarding consumers by ensuring minimum standard of purity

Customer segmentation table for IPO

Service	Who are customers	How many	Segmentation	Journey (how they enter system)	Nature of transaction/ enquiries	Benefit to stakeholder/UK
Provision of statutory rights	Businesses from SMEs to multinationals Mostly represented by IP professionals (attorneys) (Segmented as represented and unrepresented)	27,000 patent applications 40,000 trademark applications 126,000 calls to central enquiry unit 1,4000,000 unique hits on website	Patents Trademarks Designs Domestic, European or International	Web site Calls to enquiry unit Repeat business from intermediaries (72% patents and 55% trademarks) Web site Other Information lacking	Specialist and technical Also scientific for patent applications Customers	
Commercial services				Information lacking		
Advice and information				Information lacking		
Tribunals				Information lacking		
Policy development	Government – BIS,	~ 10	Policy advisors, Government officials, Ministers on digital Britain	Repeat customer approach directly networking/stakeholder groups	Specific – Digital Britain, helped in production of report and legislation for Digital economy Bill	Protection of copyright and development of strategy

Service	Who are customers	How many	Segmentation	Journey (how they enter system)	Nature of transaction/ enquiries	Benefit to stakeholder/UK
Committee chair for Cross Whitehall	Government - DECC	1				
Technical advice - policy	Government – Office for Life Sciences - Ministers	1	Tax and licensing		Development on tax environment for IP licensing – technical advice	
Outreach department – programmes and initiatives	Businesses Education systems Government HEIs				Awareness raising	
Patents informatics team	TSB		Emerging technologies - KTNs		Tool kit developed	

Annex 4: Diagrams illustrating size and technology readiness of customers who use the NI6

Figure 1: Original diagram from information provided by NI6

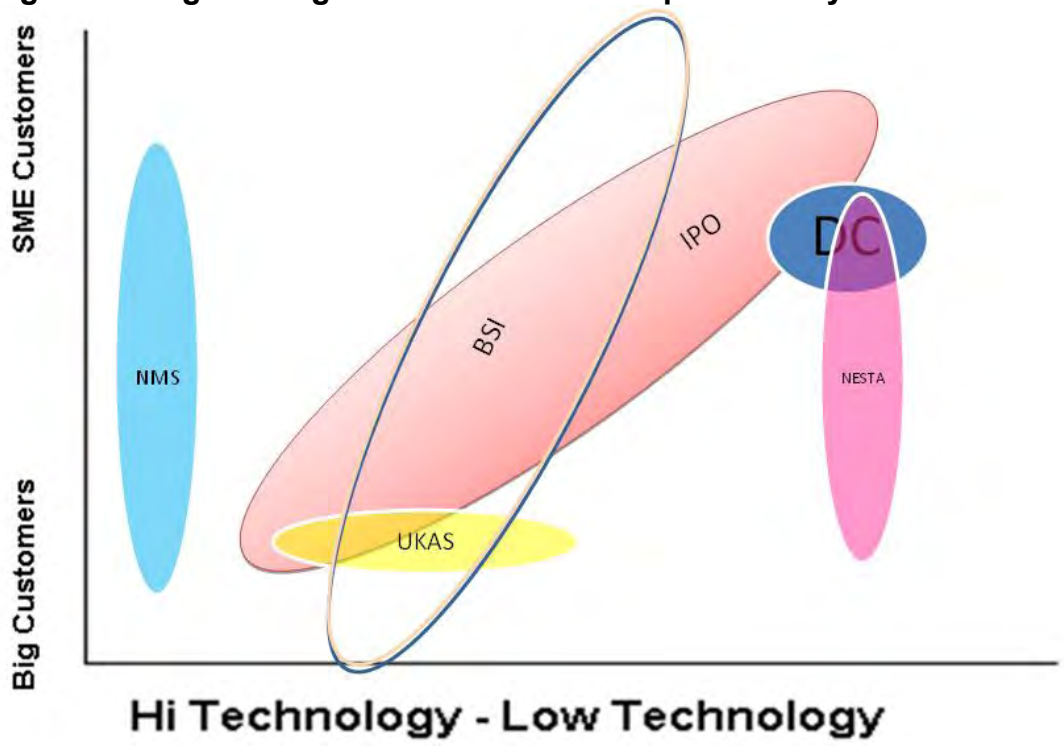
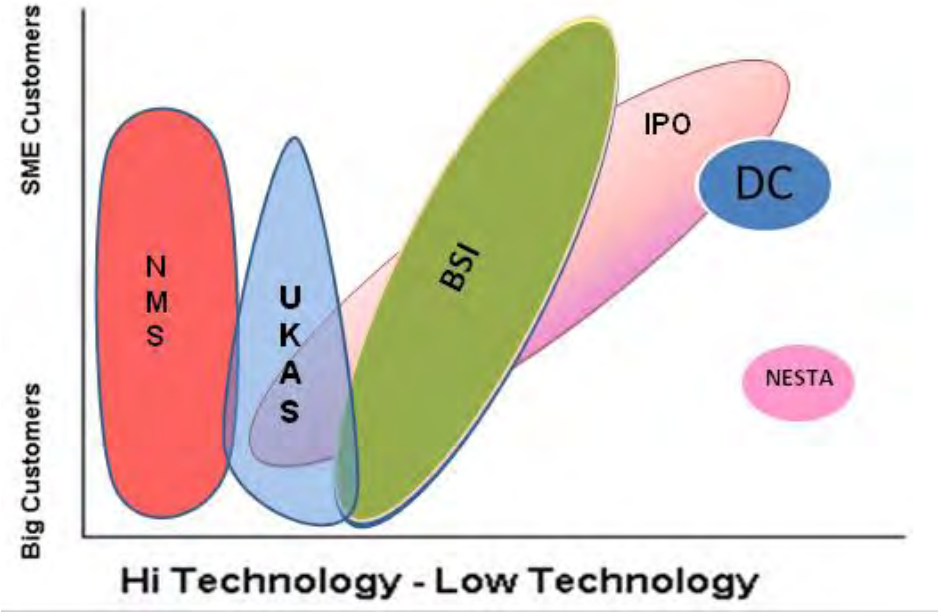


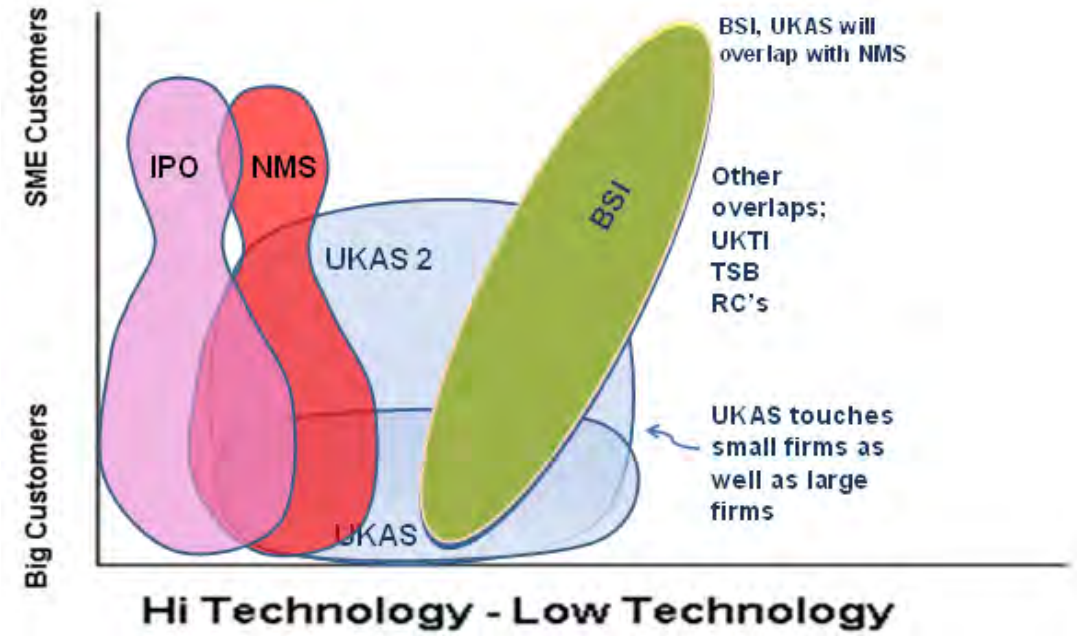
Table illustrating the main customer types as determined from the written submissions by the NI6 and after refinement with direct NI6 input.

NI6	Original assumption		Refined understanding	
	Company size	Hi/Low technology	Company size	Hi/Low technology
Design Council	SMEs	Low tech	✓, but some larger as well	✓
Nesta	SME - big	Low tech	Can incorporate all types of customers	
IPO	All sizes	All types	✓	✓
BSI	All sizes	All types (mainly mid-tech)	✓	✓
NMS	Small to medium	High tech	✓	✓
UKAS	Mostly large	High tech	Some small	Some mid-tech

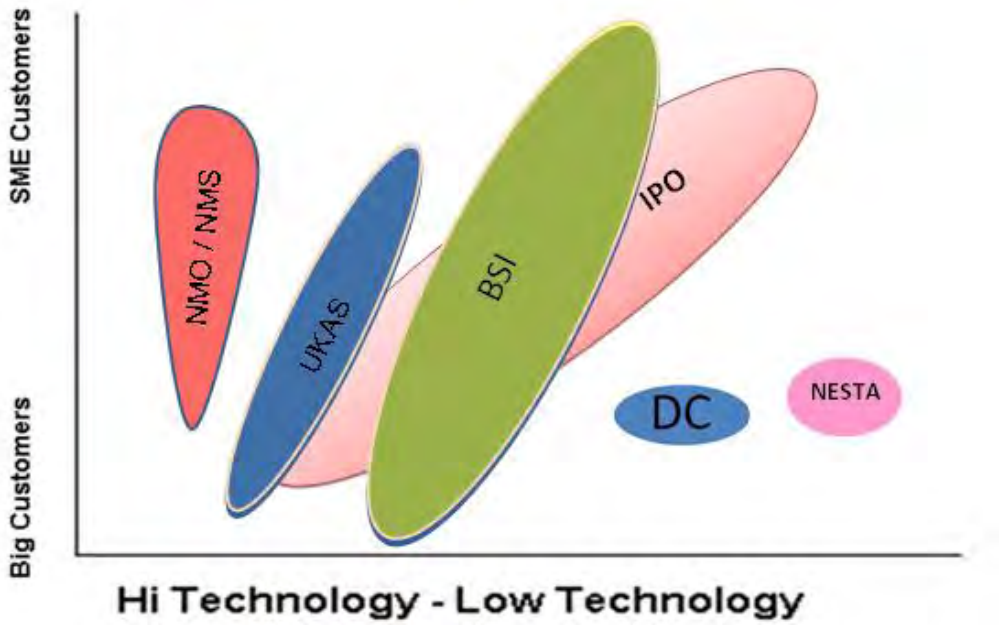
Tick (✓) illustrates that previous understanding was correct

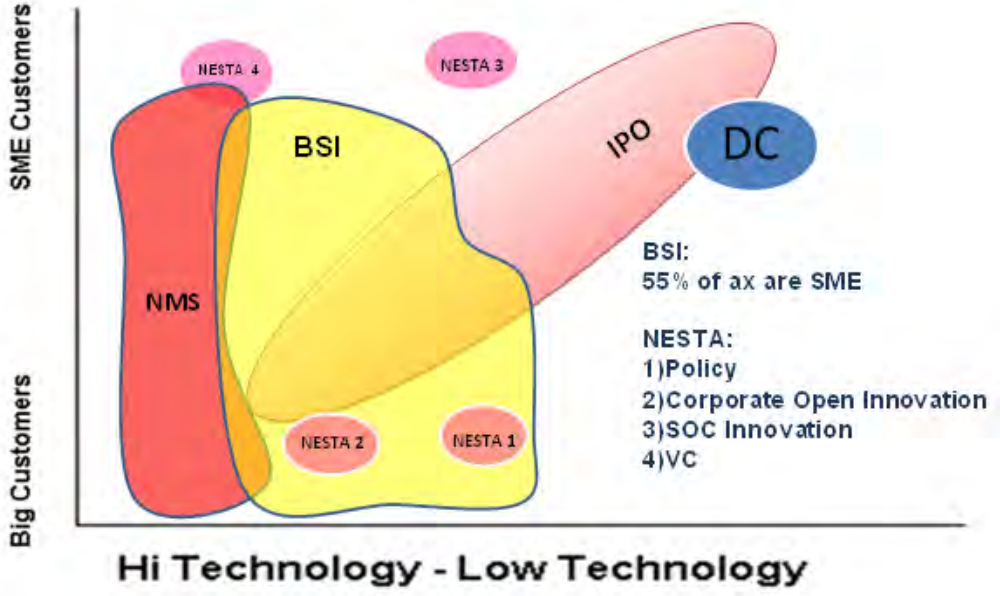
Diagrams produced by NI6 participants during Workshops. Several different diagrams were produced as no consensus could be reached.





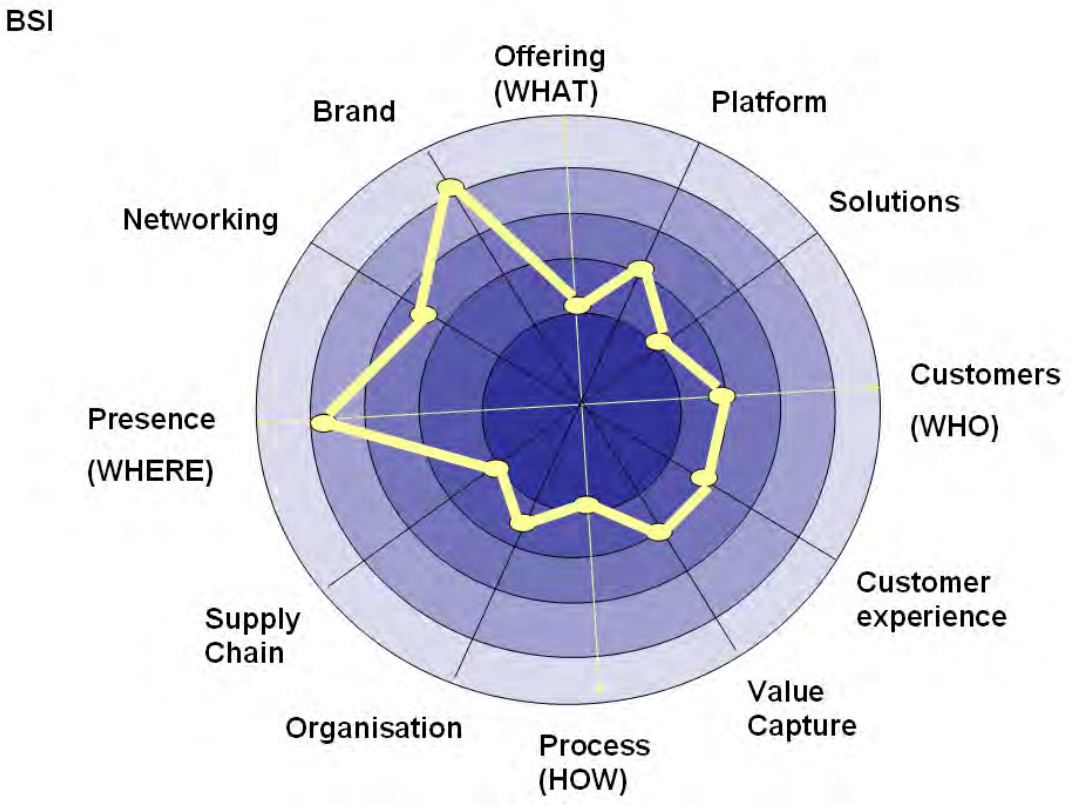
(Note: for the diagram above, there is uncertainty as to the exact positioning/identification of the IPO and NMS blobs as they were not recorded properly on the flip charts).


SME Customers
Big Customers
NMO / NMS
UKAS
BSI
IPO
DC
NESTA
Hi Technology - Low Technology

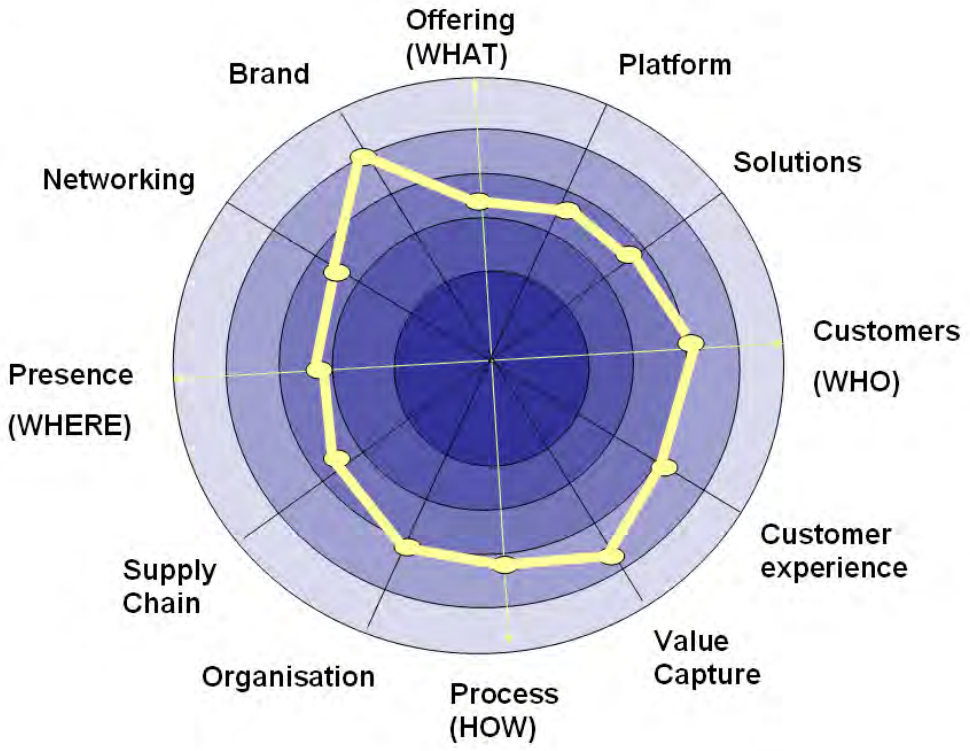

SME Customers
Big Customers
NESTA 4
NESTA 3
BSI
IPO
DC
NMS
NESTA 2
NESTA 1
BSI:
55% of ax are SME
NESTA:
1)Policy
2)Corporate Open Innovation
3)SOC Innovation
4)VC
Hi Technology - Low Technology

Annex 5: Innovation Radar Taken From Kellogg's Innovation radar

http://www9.kellogg.northwestern.edu/main_admin/servlet/viewsflash?cmd=page&pollid=wolcott!Radar



IPO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Capture
Process
(HOW)
Organisation
Supply
Chain
Presence
(WHERE)
Networking
Brand

NMO


Offering
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Platform
Solutions
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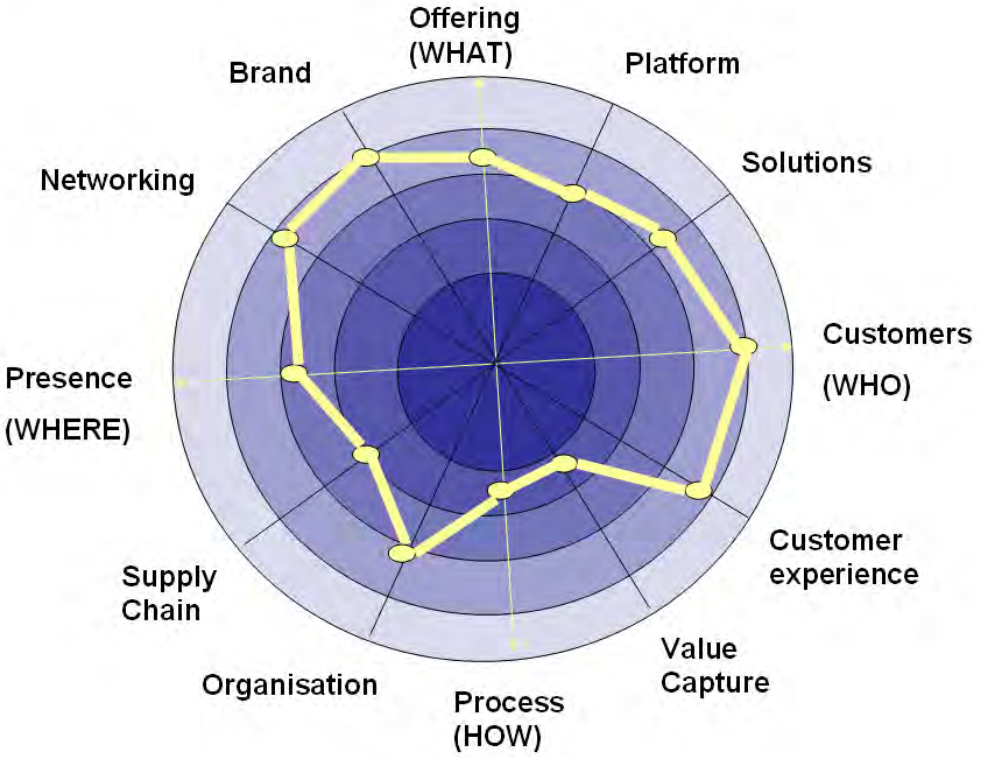
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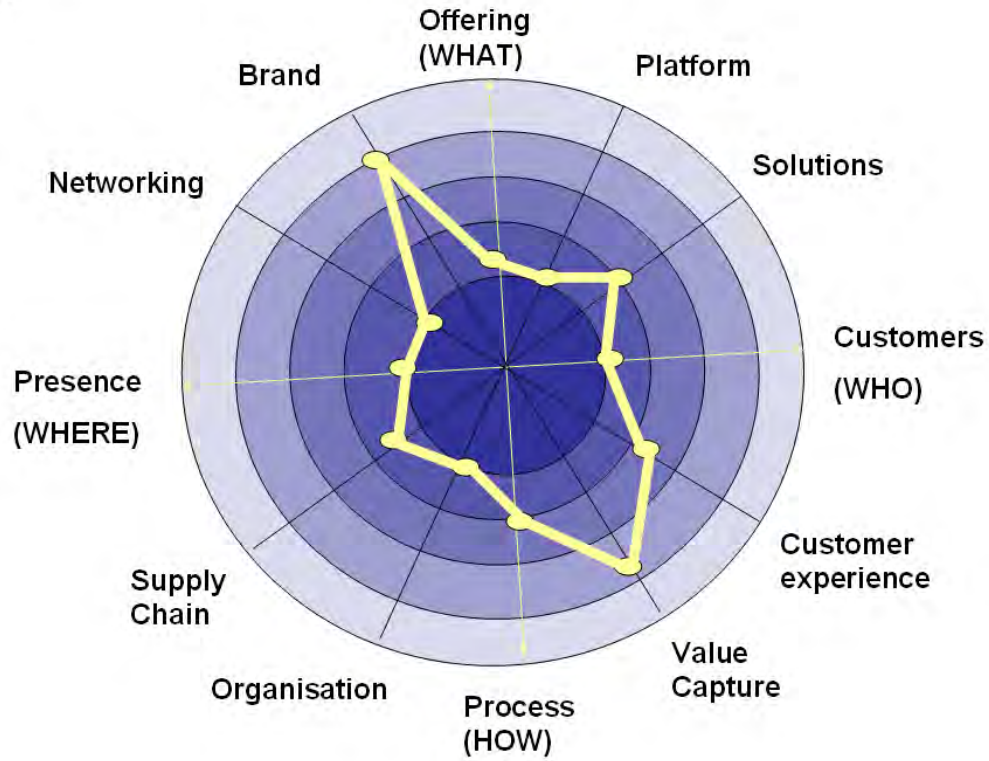
Networking
Brand

UKAS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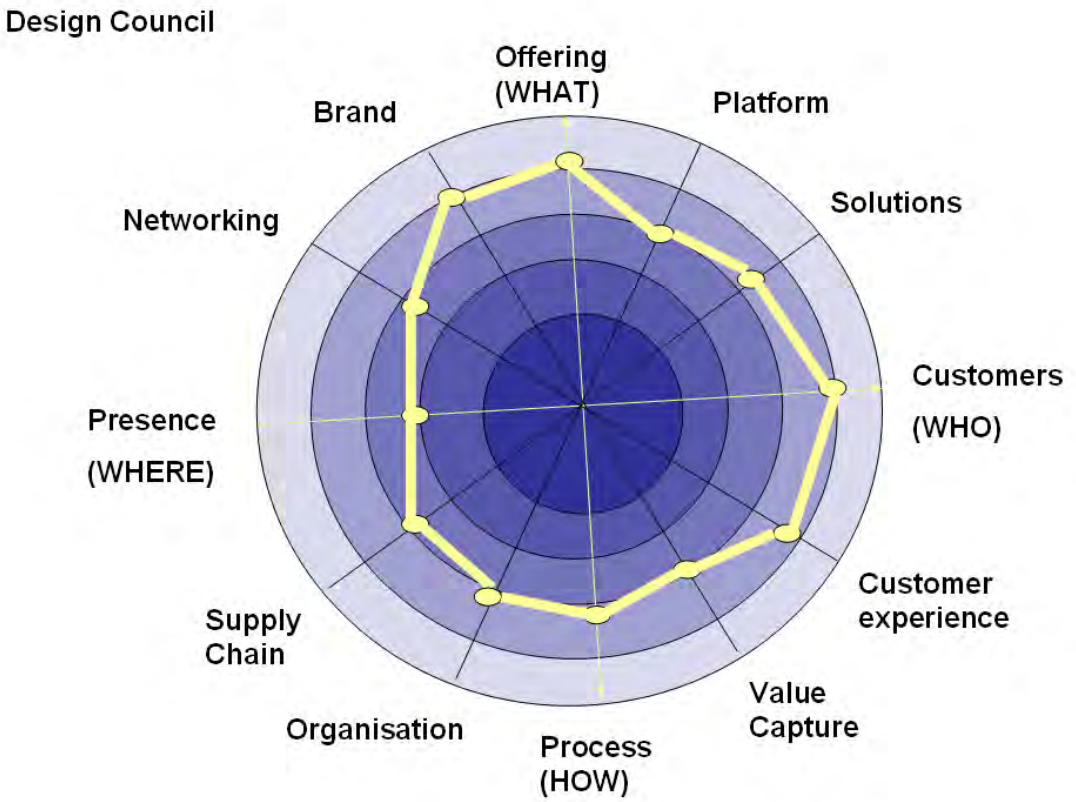


I. OFFERINGS (The Products and Services you Offer)

Your offerings are the products and services that your business provides to external customers. An innovation on this dimension is defined as the creation of new products/services or a significant augmentation of features or functionality of existing products/services.

II. PLATFORM (How you exploit the Power of Commonality)

A set of common components, assembly methods, or technologies that serve as building blocks for a portfolio of derivative products. A platform increases the speed with which new derivative products can be introduced and lowers the development, production, and servicing costs of the product line by sharing components, processes, and technologies

III. SOLUTIONS (Creating End-to-End Offerings to Solve Customer Problems)

Solutions are a customized combination of products, services, and information that address an end-to-end customer problem. Good solutions are integrated, complete and seamless, so that customers can solve their problems without dealing with multiple vendors or integrating several products and/or services.

IV. CUSTOMERS (Uncovering New Customer Segments or Unmet Customer Needs)

Customers are the end-users or organizations that use or consume your offerings to satisfy a specific set of needs. Innovating on this dimension means discovering entirely new customer segments, or uncovering unmet or unarticulated needs of existing customer segments.

VI.CUSTOMER EXPERIENCE (The Way Customers Interact with Your Firm)

The customer experience is what a customer sees and feels when he or she interacts with the company across all moments of contact. It includes the search experience, the evaluation experience, the buying experience, the installation experience, the usage experience, the service experience, the support experience, and the product upgrade/disposal experience. Customer experience design involves focusing on all senses (sight, sound, touch, taste and smell), all channels of customer interaction, and all stages of the buying process. Customer experience innovation involves identifying inefficiencies, gaps, or dissatisfaction with any stage of the customer experience, and using these insights to redesign the interface between the customer and the firm.

VI. VALUE CAPTURE (How You Make Money in your Business)

Value capture refers to how a company makes money from its business activities. This includes the revenue streams that the company creates, the pricing mechanisms that it creates, and the ways that it increases its ability to capture more value from its offerings. Innovations in value capture involve finding new revenue streams, changing the ways you get paid for your offerings, designing innovative pricing and licensing schemes, or creating innovative mechanisms like yield management. It may also involve changing the position or scope of the company"s value chain participation, creating gain and risk sharing mechanisms, and actively managing intellectual property.

VII. PROCESS (The Way You Manage Internal Business Processes)

All internal business activities of a company like financial management, technology development, manufacturing/transformation processes (Business Process Reengineering, Six Sigma), new product/service development, strategy development etc are processes. A process innovation aims to improve the efficiency and the effectiveness of these processes, resulting in improvements in process quality, process times, and process costs.

VIII. ORGANIZATION (How You Structure Your Organization and Manage Human Capital)

Organization refers to a company‟s organizational structure, business partnerships and human capital. An organizational innovation may be an innovative organizational design, an innovative approach to managing strategic alliances, innovative HR practices, and innovative incentive schemes for employees.

IX. SUPPLY CHAIN (How You Source Inputs and Deliver Your Offerings)

The supply chain is defined as the sequence of activities that move goods from the raw material stage to the end user. Supply chain management involves planning and execution of all activities from upstream procurement of direct materials and operating supplies to downstream distribution and logistics management for finished goods. Innovation in supply chain may include changes in the structure of the supply chain, changes in how information flows among participants in the supply chain, and the process used for collaborative planning and execution.

X. PRESENCE (The Channels you Use to Go To Market)

Presence is defined as the channels that are used to market a company‟s offerings, usually through a set of channel partners. Channel innovations can include creation of entirely new channels, adding innovative channels to the channel mix, integrating channels in innovative ways, designing channels around customer segments, or changing the structure and roles of channel partners to create dramatic new value.

XI. NETWORKING (Making your Offerings Smarter by Connecting them to an electronic network, such as the Internet)

Networking can be visualized as the difference between your offering on a standalone basis and as part of a network. An innovation in networking is a change in the way you augment your customer interaction or improve functionality of your offerings through network based intelligence.

XII. BRAND (How Your Customers Think and Feel about You)

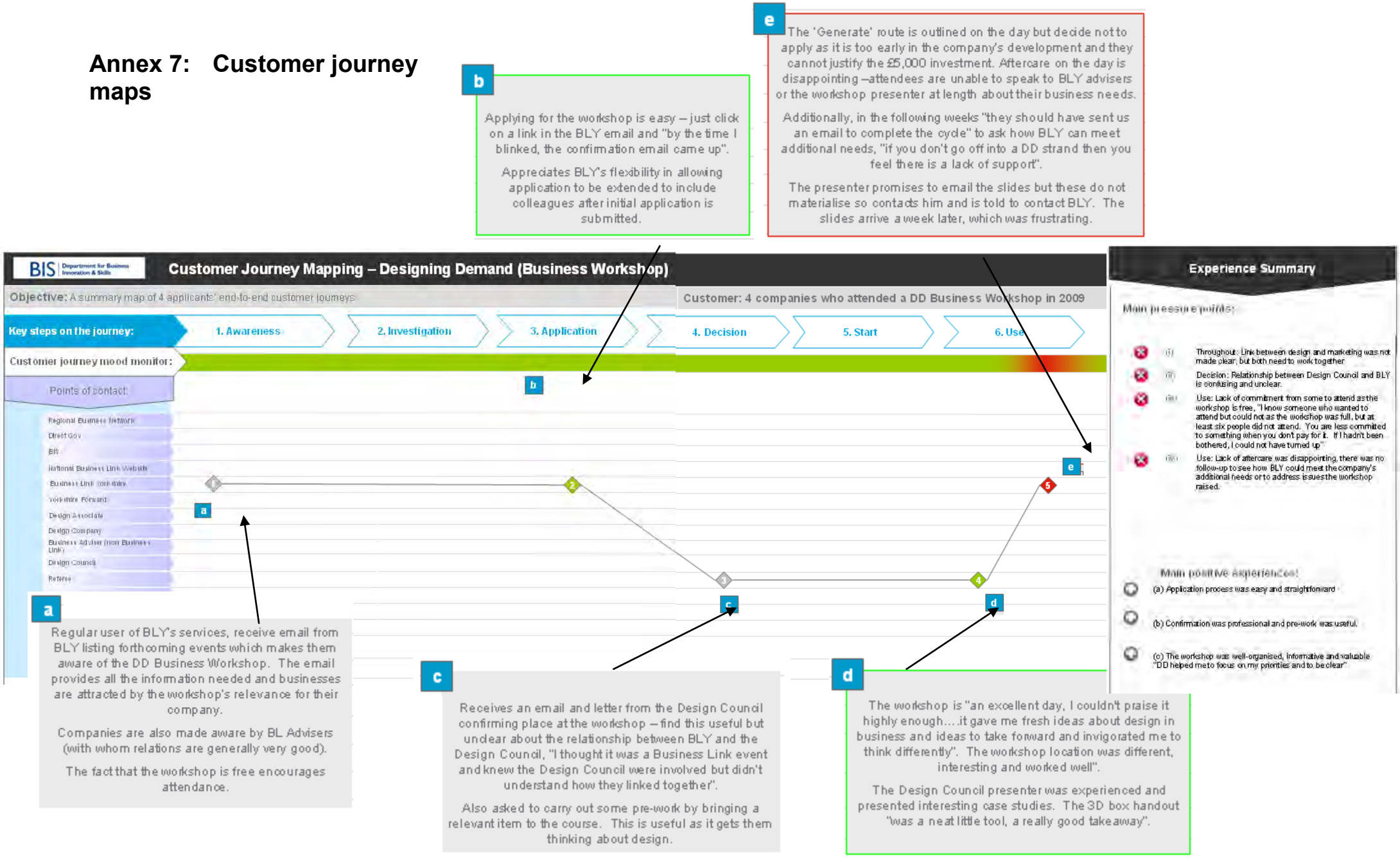
A brand can be defined as an identifying symbol, word, or mark that distinguishes a product, a category or a company from its competitors. A brand creates an emotional attachment beyond the mere functionality of the offering and may even stand for a lifestyle. Brand innovations include leveraging brand equity (i.e. use of an established brand name to enter a new product class), co-branding, or fundamentally changing the brand image (i.e. what the brand represents or to whom it appeals).

Annex 6: The Innovation Infrastructure Challenge Pot

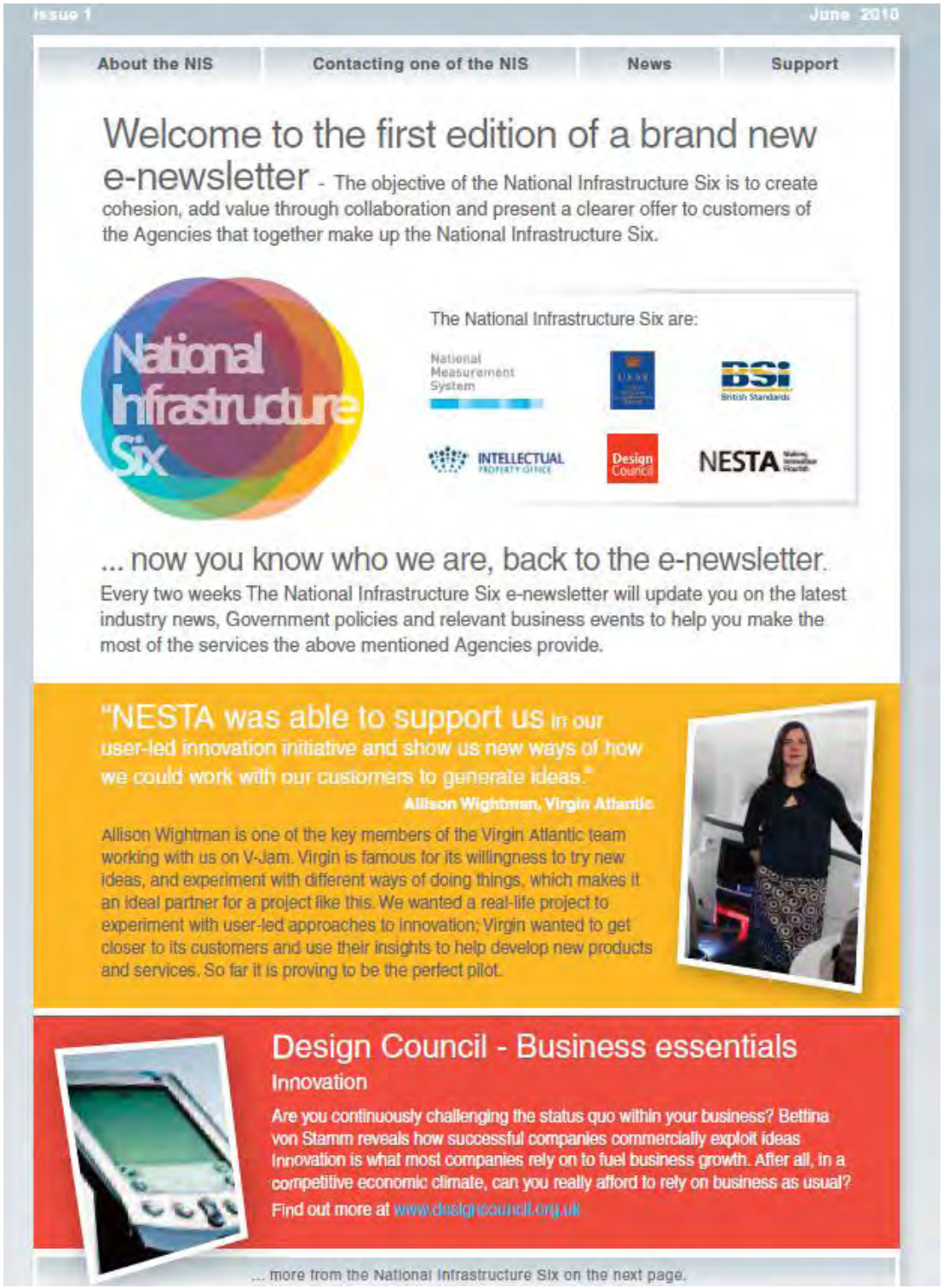
Clear objectives, and meaningful evaluation, should be among the prerequisites for successful bids so that there is accumulated learning to support subsequent work. All ideas should be in line with Smarter Government objectives and with future proposals on innovation advice and guidance. Joint proposals may aim to tackle market failures around "shallow" levels of information about the systems as a whole (i.e. where to go for advice), or to tackle the need for "deeper" customer-focussed combined support in key sectoral areas e.g. a combined IP/metrology/standards advice service for the instrumentation sector, or a combined IP/design/quality management standards service for SMEs in the creative industry sector. Proposals aimed at innovation intermediaries might also be developed (project evidence indicated that previous attempts to train BL advisers on single topic issues had been an uphill task.)

- Up to £1 million
- Aimed at business rather than Gov.
- NI6 prototype challenge fund – to work together
- Refine content of offering or refine the reach of it
- Incremental to transformational.
- Q: costing basis for bid to include match funding (benefits in kind rather than hard cash)
- Min 2 of NI6 partners would also require IP to be a key theme (intellectual assets IP rather than IPR type work)
- Steering board to oversee/review/evaluate bids one person per NI6
- Particularly welcome ideas to engage in new ways which are equally spread across NI6 using different ways to engage e.g. Share expertise of how we can use new media and social networks to communicate with customers
- The use of the pot should reflect the direction given by the dept (BIS) at the mandating conference
- Inviting other partners allowed for specific projects e.g. UKTI, HEFCE etc
- Aim to set up quick and dirty – first call out end July, bids in September.
- Who to hold money – probably best with IPO
- Max and min size of projects – do we want things which are noticeable??
- Sort of ideas include mocking up innovation zone in Teddington (may be virtual or actual)
- KPIs for projects and for the challenge pot as a whole

Annex 7: Customer journey maps



Annex 8: Newsletter mock up



Issue 1 - June 2010

The Agencies that make up the National Infrastructure Six are:

Design Council · BSI British Standards · NESTA · Intellectual Property Office · National Measurement System

Welcome to the first edition of a brand new e-newsletter

National Infrastructure Six

The objective of the National Infrastructure Six is to create cohesion, add value through collaboration and present a clearer offer to customers of the Agencies that together make up the National Infrastructure Six.

The National Infrastructure Six e-newsletter is here to update you on the latest industry news, Government policies and business events to help you make the most of the services the above mentioned Agencies provide.

"NESTA was able to support us in our user-led innovation initiative and show us new ways of how we could work with our customers to generate ideas."

Allison Wightman, Virgin Atlantic

Allison Wightman is one of the key members of the Virgin Atlantic team working with us on V-Jam. Virgin is famous for its willingness to try new ideas, and experiment with different ways of doing things, which makes it an ideal partner for a project like this. We wanted a real-life project to experiment with user-led approaches to innovation; Virgin wanted to get closer to its customers and use their insights to help develop new products and services. So far it is proving to be the perfect pilot.

Design Council - Business essentials

Innovation

Are you continuously challenging the status quo within your business? Bettina von Stamm reveals how successful companies commercially exploit ideas Innovation is what most companies rely on to fuel business growth. After all, in a competitive economic climate, can you really afford to rely on business as usual?

Find out more at [illegible]

... more from the National Infrastructure Six on the next page.

Want more news? Sign up to email alerts on the BIS **website www.bis.gov.uk**

NATIONAL **INNOVATION 6**

newsLETTER

Highlighting current core issues from the BIS

WEEK OF EVENTS LAUNCHED TO BOOST APPRENTICESHIPS

National Apprenticeship Week was launched yesterday to thank businesses for offering apprenticeships and encourage people to look at the benefits of becoming an apprentice.

Major UK employers are expecting to hire thousands of apprentices in 2010, with a new grant offering them £2,500 for each 16 or 17-year-old apprentice taken on.

Apprenticeships Minister Kevin Brennan said: "Skills will be key to the recovery of the UK economy and apprentices can be vital to businesses looking to innovate and grow."

Find out more about apprenticeships at www.apprenticeships.org.uk

PARENTS GET EXTRA HELP UNDER NEW PLANS

New laws to give parents more choice and flexibility in how they use maternity and paternity leave were announced last week.

Mothers will be able to choose to transfer the last six months of their maternity leave to the father – with three months paid.

"The balance between work and family life has changed for the better in the past decade," said Business Minister Pat McFadden.

NEW FUND LAUNCHED TO BACK GREEN BUSINESSES

A £125 million environmental investment fund has been launched to invest in low carbon and clean technology funds and companies.

The fund is part of the public/private UK Innovation Investment Fund and will provide much needed venture capital to help innovative green businesses grow.

Innovation Minister Paul Drayson praised the speed with which the fund has been set up and said: "After a tough spell, things are looking up for our entrepreneurs and innovators."

National innovation 6 comprises the following organisations

National Measurement System | INTELLECTUAL PROPERTY OFFICE | Design Council | NESTA | UKAS | BSI British Standards

Annex 9: Possible logos

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)

13)

14)

15)

These were created by:

MWA DESIGN ASSOCIATES
Park House, 803 London Road, Westcliff-on-Sea, Essex SS0 9SY
T: 01702 472727 F: 01702 480600 E: mwa.design@btinternet.com W: www.mwadesign-uk.com

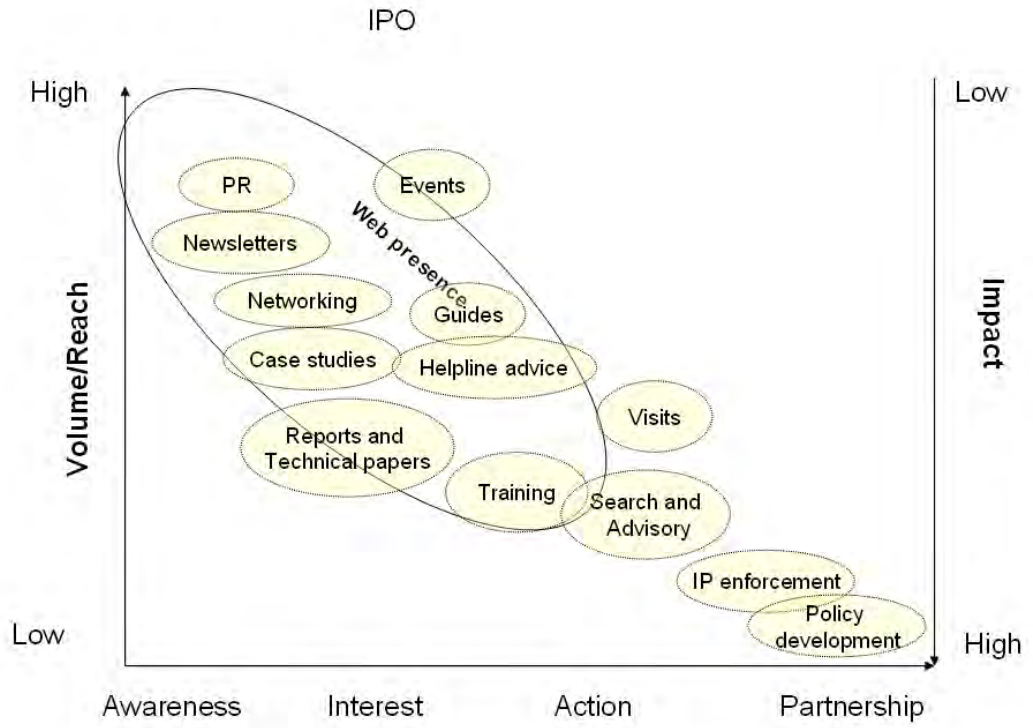
Annex 10: Customer needs/types of customers

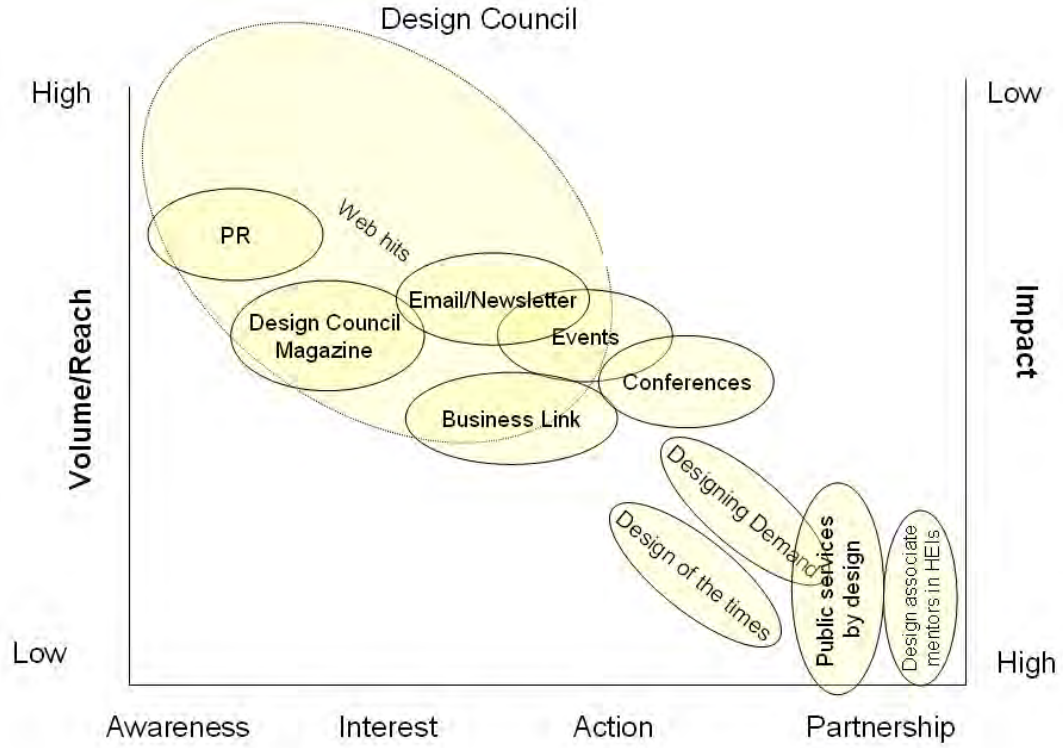
Customer Group	Shallow/deep need	Current products	Possible Future products	Comments
Small, creative, low-tech	Shallow – need to know enough about IP, stds, metrology to make choice whether to buy/use.	Creative Industries KTN (TSB) DC + prof body websites BL.gov – Soln Business – Des Demand UKTI advice re exporting? IPO website – design rights, TMs, copyright IPO helpline NESTA events/£ on creative/arts end Innovation Vouchers used for design advice British Library IP Business Centre (customer data?) BIS website??	Joint IPO/DC/NESTA advice: web, print, phone, events Signposted BSI web pages: quality mgt, service sector standards. Design stds. Relevant cttees New media/social networking – twitter etc Build on DC-HEI links in TTO project – two way advice stream. Revamp area of BIS site around design/innovation	Step too far to get them interested in metrology? Reverse products - Get designers to work with NMI marketing teams to help shape and sell offer (a scheme sim to TTO one – draw in IPO?) Customer journey will not start with TSB or BIS. Maybe BL or DC site. Visual marketing key; stylish events; lots networking. Big cities – not suburban?
Small, hi-tech niche sectors	Shallow + Deep May learn about IP, stds,	TSB products – KTNs, KTPs, tax credit info, RDA regional/sectoral innovation networks Prof bodies, Trade associations	Better signposting of all NI6 services from TSB and all KTN web pages (tog or separately)	If TSB devise their channel management and brand strategies, other products can be linked into this.

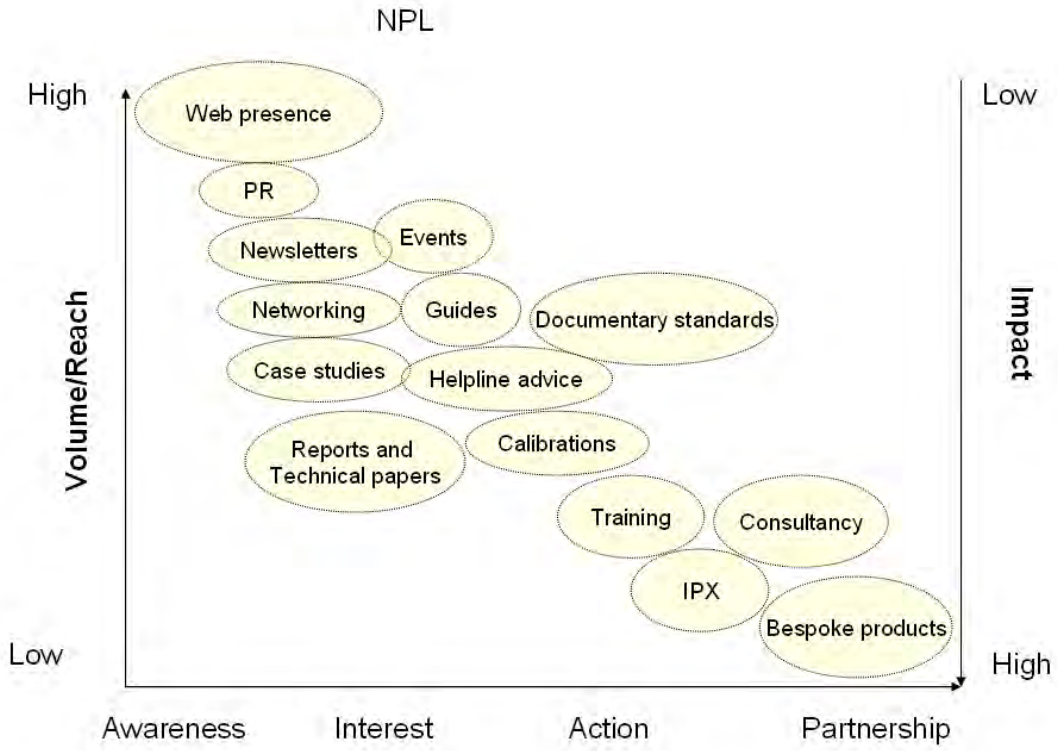
	metr in ed/trg or CPD for profession.	NMI advice /training on specific areas, problems (but not high awareness of their offer) NESTA technology related events/£	Theming – eg energy – link to key BSI stds and cttees, UKAS work. Better marketing of the NMS offer, linked to BSI, UKAS, TSB etc Work with TAs (eg EEF) to signpost & support? Events drawing out relevant areas of IP, design, stds for particular groups (develop std package to be tweaked) Innovation Hub@ Teddington – with access to search terminals, advice and networking services similar to British Library + Stds, Met & Design. Innovation Touring Centre – IP regional roadshow but broader (like Min Wage bus?)	Need to be specific, sectoral, credible – draw on gravitas and reputation of NPL, BSI, DC etc brands Prob happy to travel to Teddington – lots access via Heathrow, M4 corridor, SEEDA and London region firms (eg Guildford). Touring bus – style of experience would need to be right.

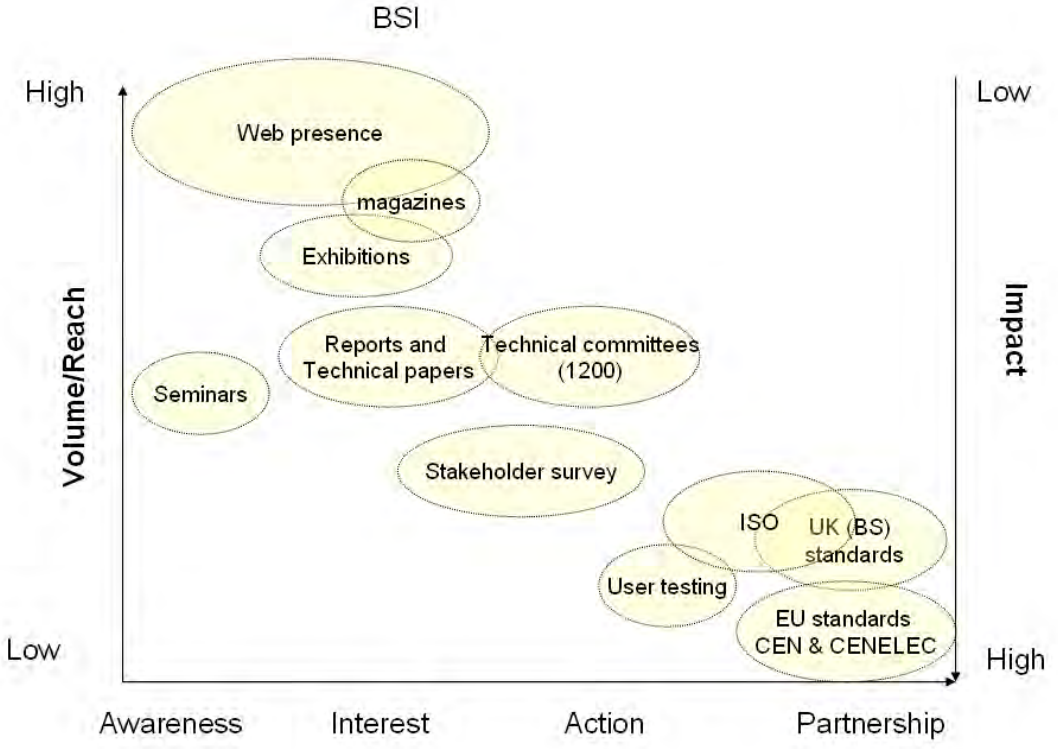
Entrepreneur	Depends on sector	Govt advice on financeVC/ent funds, NESTA TSB advice if high tech If biotech – Patent, TM etc If ICT – IPR, ICT stds, design. If low C/energy - If instrumentation related - NMI NINJ sectors	V sharp, focussed deep advice from professionals relevant to their areas of business.	ED lead re policy. Scope for shaping “sharp offers” more around key strategic sectors
Large firm Exec or SET	Deep	TSB, KTNs Websites, events, confs eg IPO, BSI, TSB Prof bodies, HEIs, intermediaries eg agents Shape advice systems by participating in boards etc.	Well served by current set up?	
Small established firm	Shallow			
Intermediaries	Shallow + Deep			

Annex 11: Engagement with business – depth vs volume

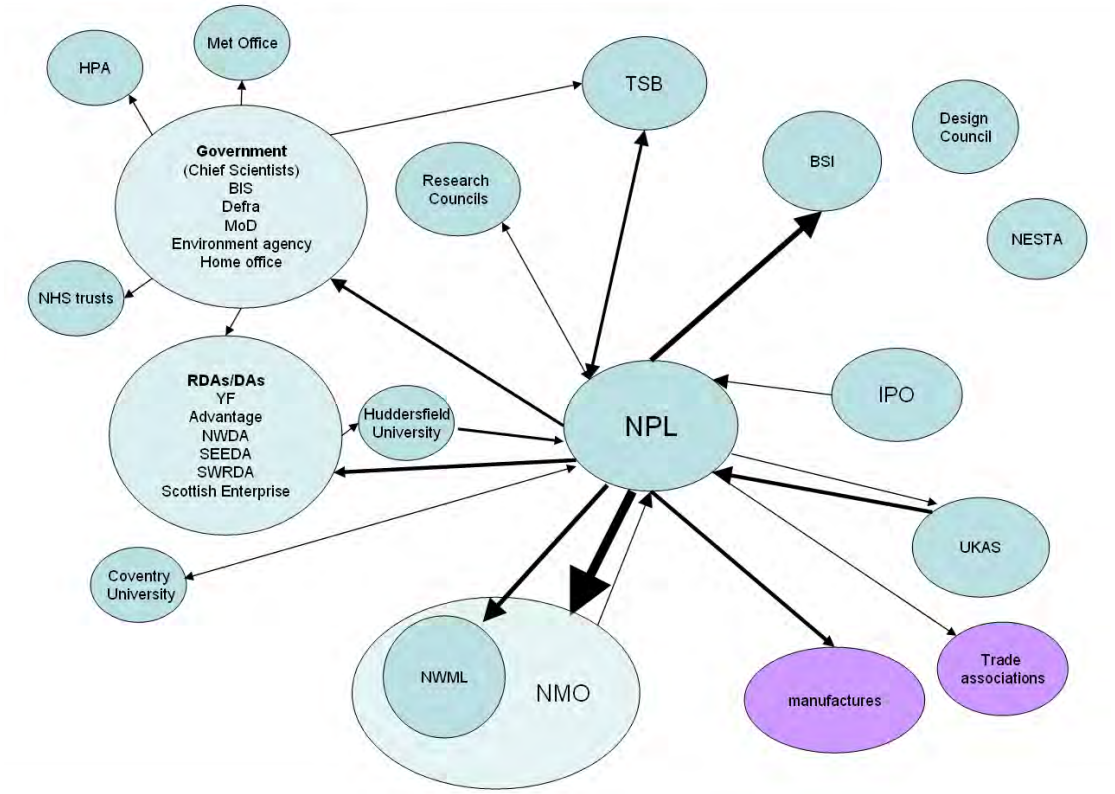


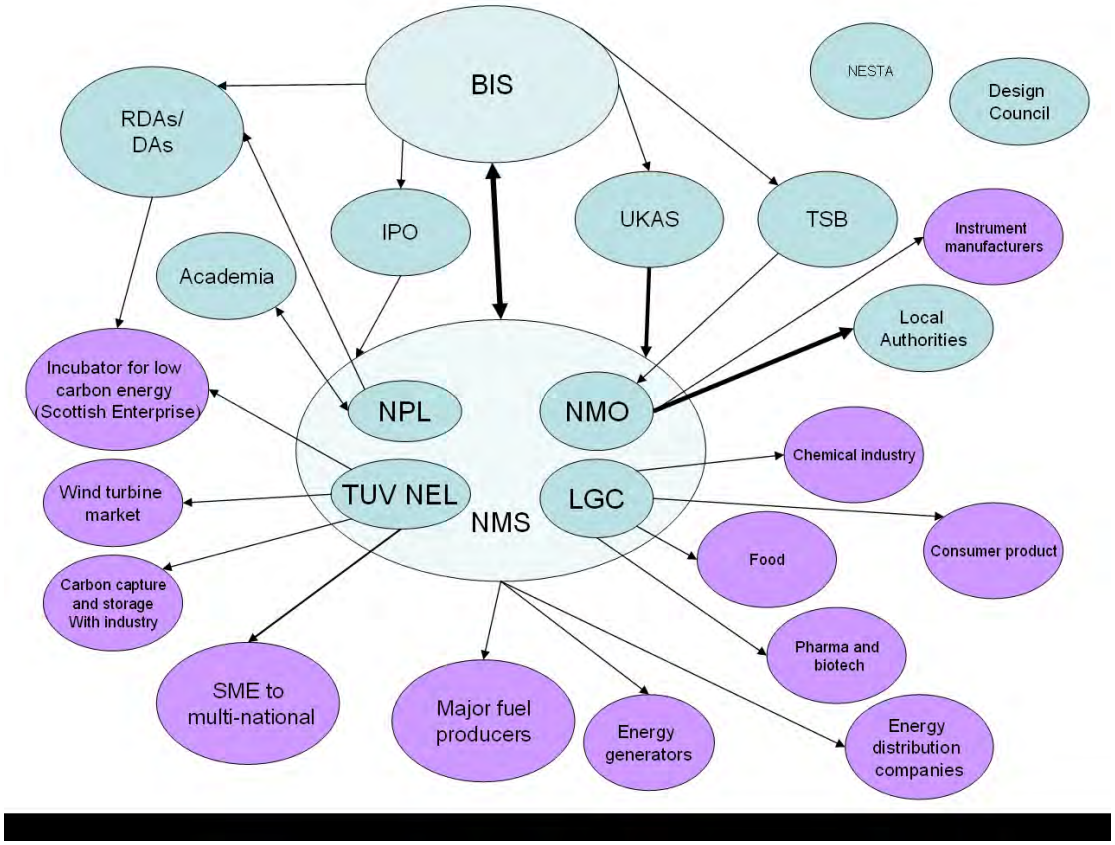


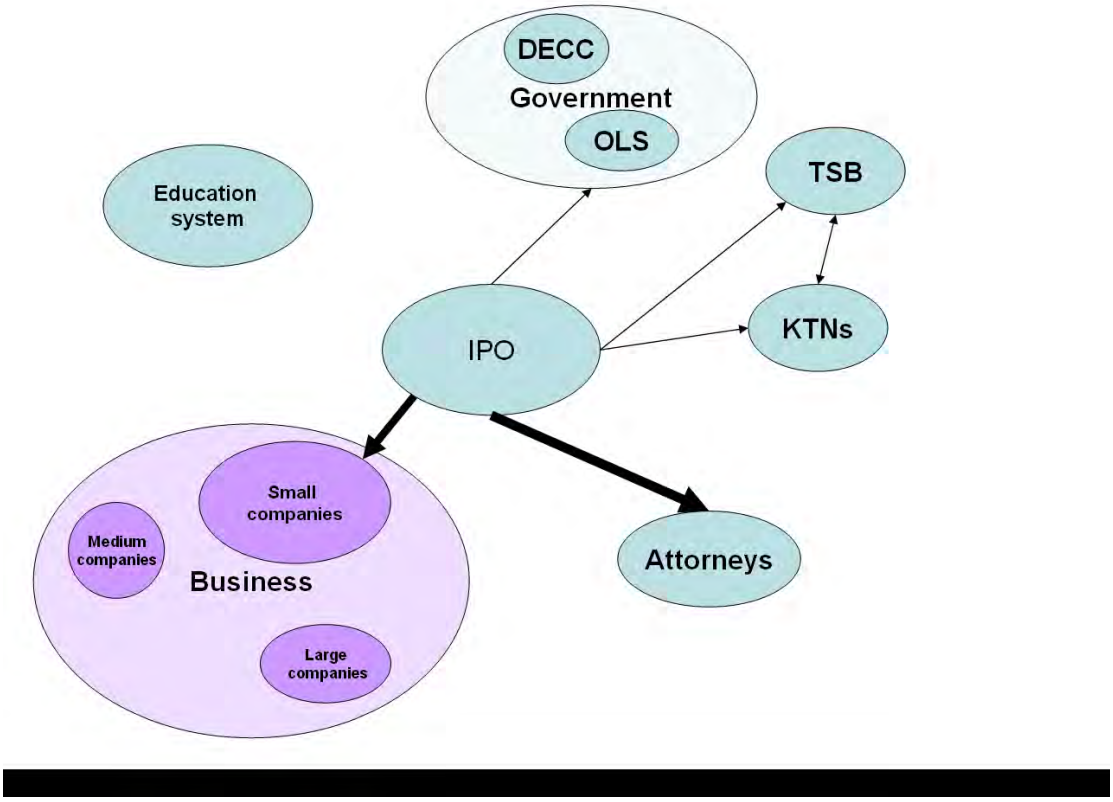

NPL
High
Low
Volume/Reach
Impact
Low
High
Web presence
PR
Newsletters
Events
Networking
Guides
Documentary standards
Case studies
Helpline advice
Reports and Technical papers
Calibrations
Training
Consultancy
IPX
Bespoke products
Awareness
Interest
Action
Partnership

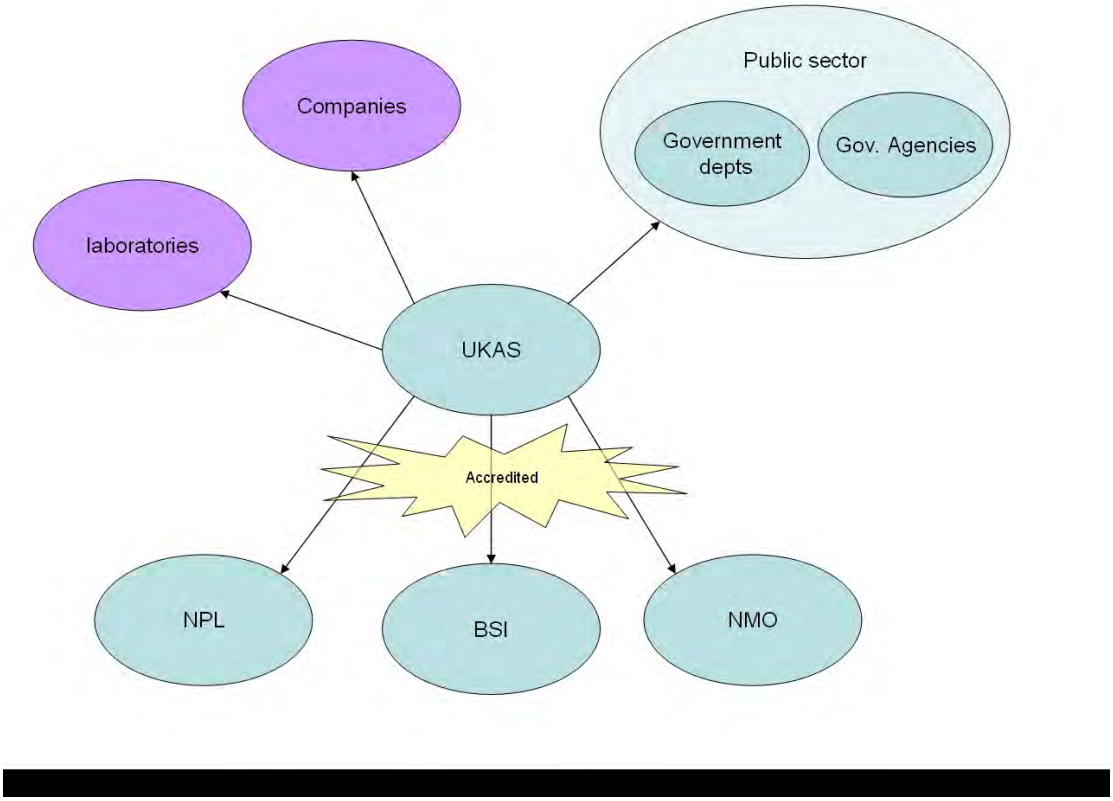

BSI
High
Low
Volume/Reach
Impact
Low
High
Web presence
magazines
Exhibitions
Reports and Technical papers
Technical committees (1200)
Seminars
Stakeholder survey
ISO
UK (BS) standards
User testing
EU standards CEN & CENELEC
Awareness
Interest
Action
Partnership

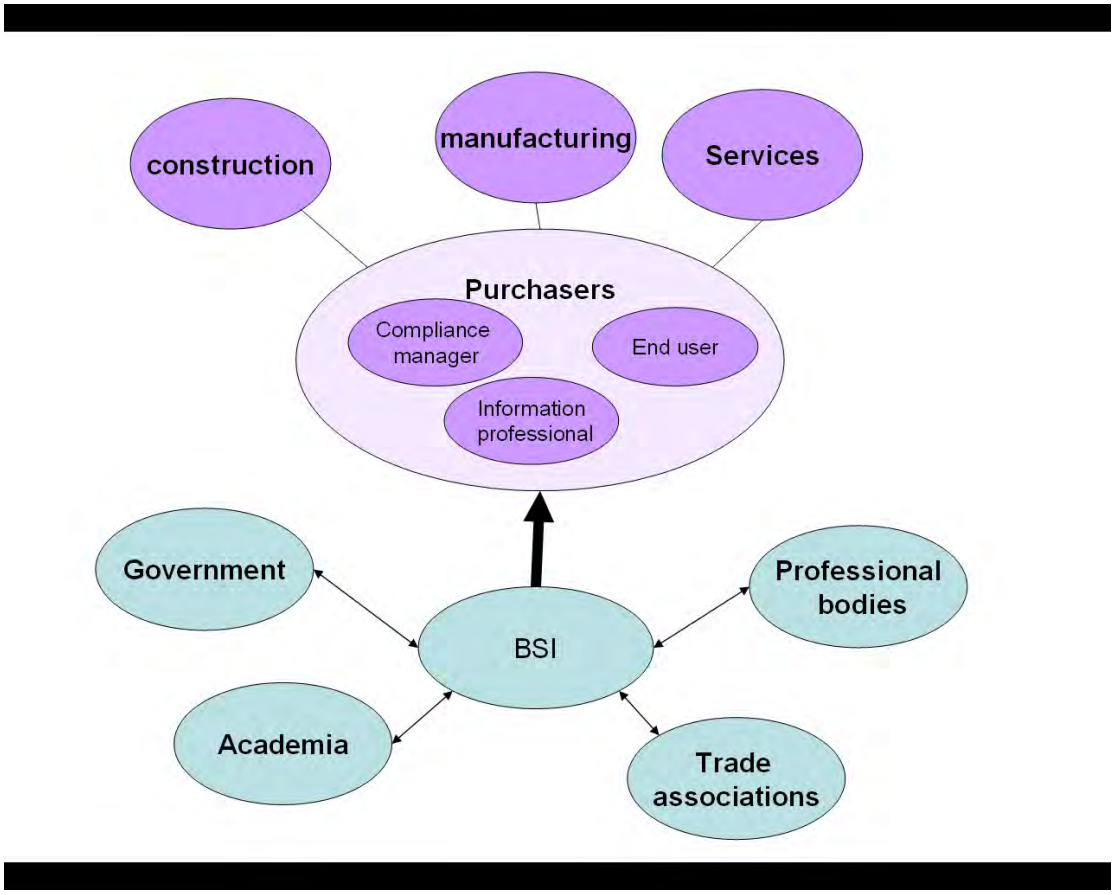
Annex 12: Customer interactions

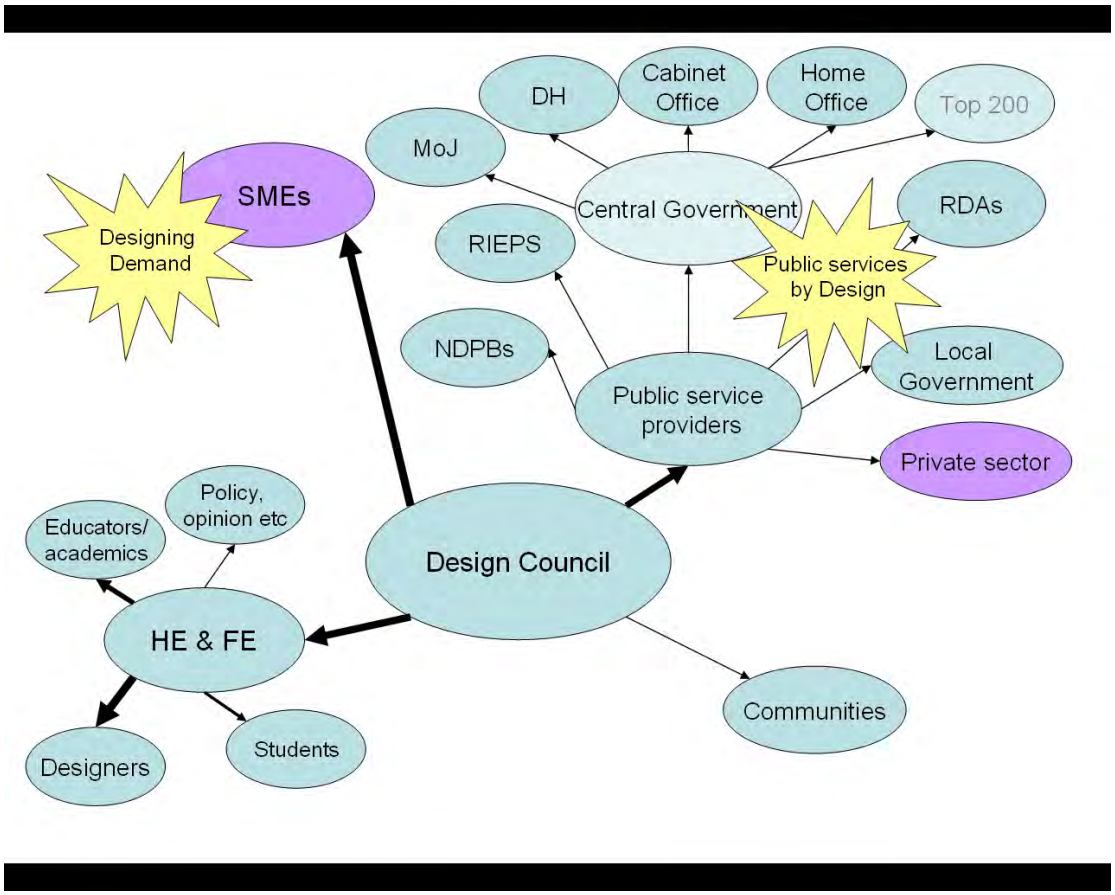





DECC
Government
OLS
Education system
TSB
KTNs
IPO
Small companies
Medium companies
Business
Large companies
Attorneys


Companies
Public sector
Government depts
Gov. Agencies
laboratories
UKAS
Accredited
NPL
BSI
NMO


construction
manufacturing
Services
Purchasers
Compliance manager
End user
Information professional
Government
BSI
Professional bodies
Academia
Trade associations


DH
Cabinet Office
Home Office
Top 200
MoJ
SMEs
Designing Demand
Central Government
RDAs
RIEPS
Public services by Design
NDPBs
Local Government
Public service providers
Private sector
Policy, opinion etc
Educators/ academics
Design Council
HE & FE
Communities
Designers
Students

Annex 13: Economic Evidence

The NI6 organisations that provide knowledge are classified as knowledge infrastructures. All share the common characteristics of:

- Indivisibility – works as part of a system
- Multi-user – many users of the same system
- Specific rather than generic – serves a specific purpose(this is what distinguishes a knowledge infrastructure form general infrastructure)
- Large scale (usually) – and usually last for a long time, hence difficult for the private sector to establish, appraise and finance
- Research knowledge – either codified or tacit – needed to underpin develop of product or services
- Publically available knowledge – may include use of measurement or test facilities, can also incorporate design and techniques as well as protecting intellectual property.

All organisations share in the role of helping manage uncertainty, which is inherent in innovation. For example IP frameworks reduce the risk of innovations being copied and standardisation can provide a technology infusion route

Customer survey information/results

Customer surveys available from:

- BSI
- IPO
- UKAS
- NWML
- NMS (NPL)

There is an overall problem with the customer surveys in that most collated answers are given as percentages of respondents per question. For some organisations we have no idea how many people responded. For others, although the overall number or respondents is good, numbers drop to <10 for specific questions.

In addition, as each organisation conducted independent surveys many questions and therefore results are not comparable.

Types of surveys and methods of data collection are summarised below.

Organisation	Year of survey	Form of survey	Total respondents	Respondent type
IPO	2009	Web based	123	12 out of 17 respondents were IP professionals
IPO	2007	Post Telephone Face to face online	283 90 51 44 468 total	61% were from small companies (1 – 49 employees 47% were customers without legal representation
BSI	2009	?	2155	35% manufacturing based 95% UK based
UKAS	2009/10	?	?	?
NWML	2008-9	Web based	111	78.2% SMEs
NMS	2002	?	55	40% manufacturing 29% non manufacturing 20% consultancy 46% from large companies (>250 employees)
NMS	2005	telephone	1200	NOTE: mix of users and non users
NMS	2006	telephone	370	106 scientists and 264 participants of the *Measurement for Innovators* (*MfI*) programme
NPL (creation of a Knowledge & Innovation Centre on the Teddington site)	2008	email	290	Business sectors included: Instrumentation, Electronics, Research, Aerospace, Environmental, Advanced manufacturing and Medical devices

How did you hear about the organisation?

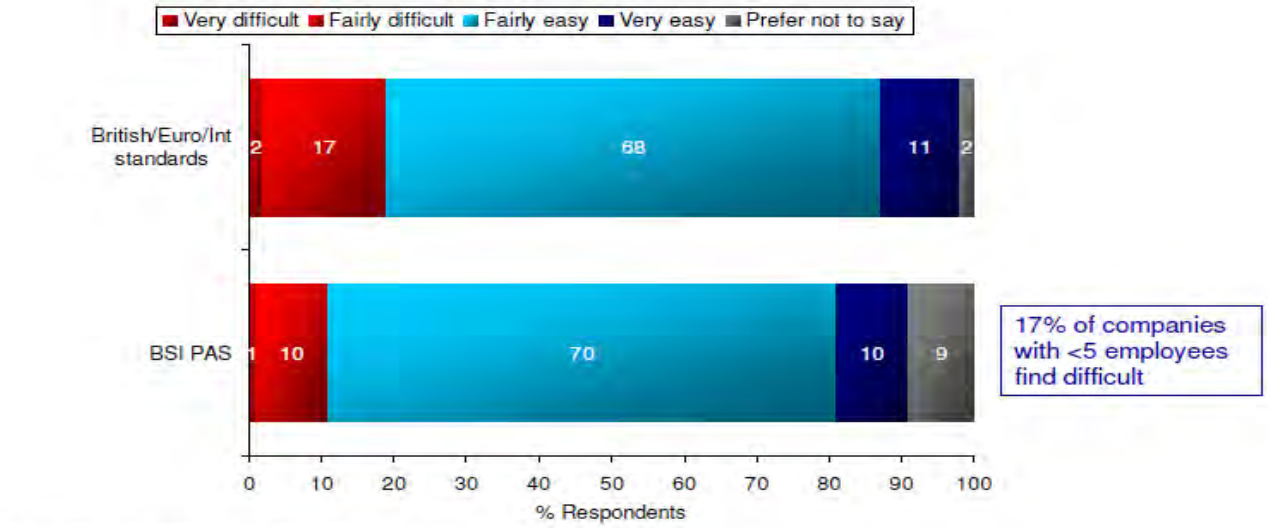
IPO - Over 50% heard of IPO through external sources such as google or London business link. Around 20% through IPO marketing

NPL – Answers included repeat customers/word of mouth, google, via other organisations

Customer satisfaction

UKAS - 94% satisfied or very satisfied
IPO (2009) – 93% satisfied (total 27 respondents)
NWML – 96.4% satisfied or very satisfied
BSI – ease of use of standards satisfaction and BSI processes and procedures are shown in the graphs below. There is no single customer satisfaction question available for comparison

Ease of use of BSI standards



Base: 709 BSI PAS users, 1948 British/European/International users

BSI processes and procedures – fit for purpose?

Base: all respondents (2155)

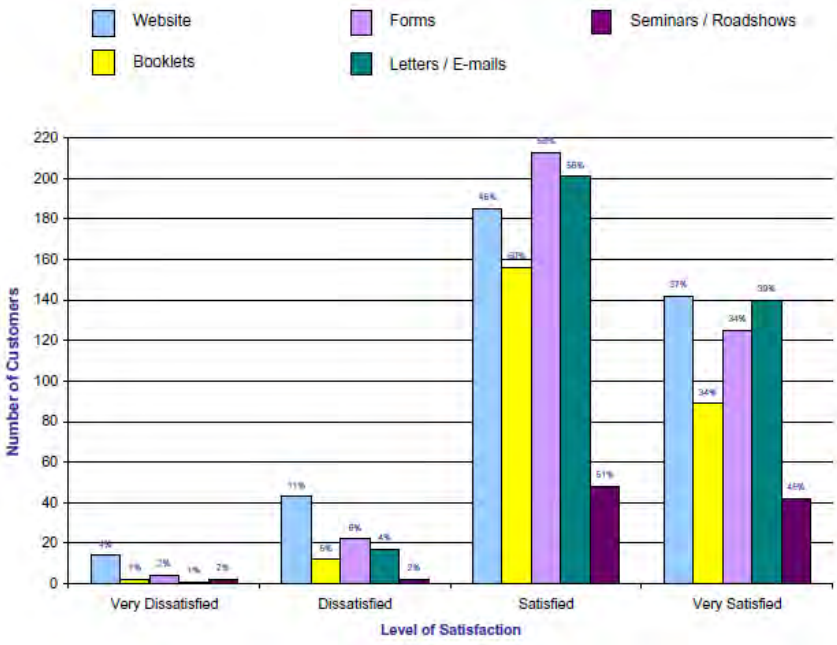
Communication

IPO (2007) web site rating showed there are areas for improvement although overall good web site. Popular requests included e-services in general and improved search facilities

In addition IPO examined different types of customers and found:

- Attorneys (125 responses) – 100 stated that knowledge of staff was „very important" and 40 confirmed a „very satisfied" rating for this
- In-house Legal Representative (65 responses) –48 stated that clarity of advice was „very important" and 16 confirmed a „very satisfied" rating for this.
- Customers with Legal Representation (54 responses) – 26 stated that friendliness of staff was „very important" to them and 13 confirmed a „very satisfied" rating for this.
- Customer without Legal Representation (211) – 79 confirmed that cost of service was „very important" to them. 20 confirmed a „very satisfied" rating for this.

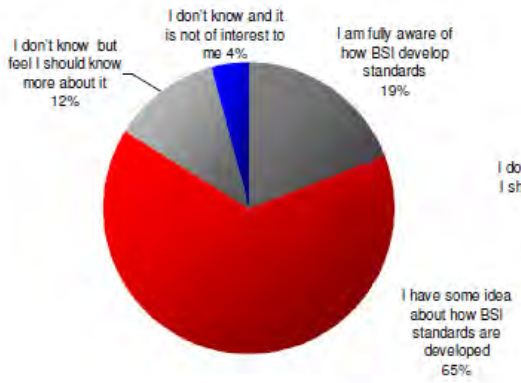
Quality of information received from IPO (2007 data)



NWML (2008/09) have experienced a downturn in the satisfation rating for their web site. Whilst the 4 year trend has yet to see any dissatisfied customers with their website they saw a 10% drop from the previous year in satisified or above from 95.4% to 85.4%.

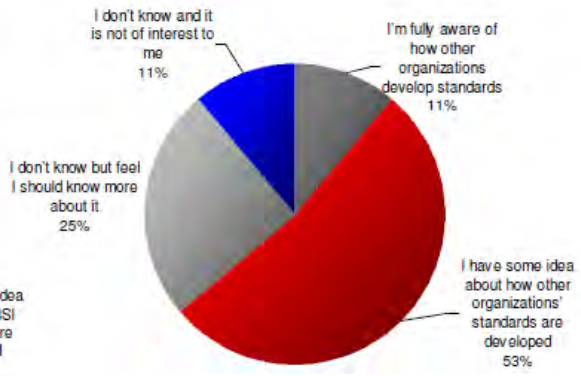
UKAS - 94% were satisfied/very satisfied that UKAS was effective in promoting awareness of accreditation and the UKAS brand. No information was given on methods of communication

BSI – awareness of how BSI develops standards is shown in the graphs below. Most users prefer online and electronic information rather than paper-based. General comments called for improvement to the overall web site.



BSI standards

Base: those not involved in BSI standards (390)



Non BSI standards

Base: those not involved in non-BSI standards (1913)

Services offered

IPO (2007 data used as too few /numbers of respondents unknown for 2009 survey)

- Friendliness of staff attracted the highest satisfaction rating of 98% from respondents.
- The cost of services attracted the highest dissatisfaction rating of 8% from respondents.
- Respondents acknowledged that clear advice (78%) and knowledge of staff (77%) were the most important aspects of UK-IPO services compared to 1% who felt each of these were unimportant.
- Many customer in 2007 were repeat customers (40% used the service 10 or more times during the year).

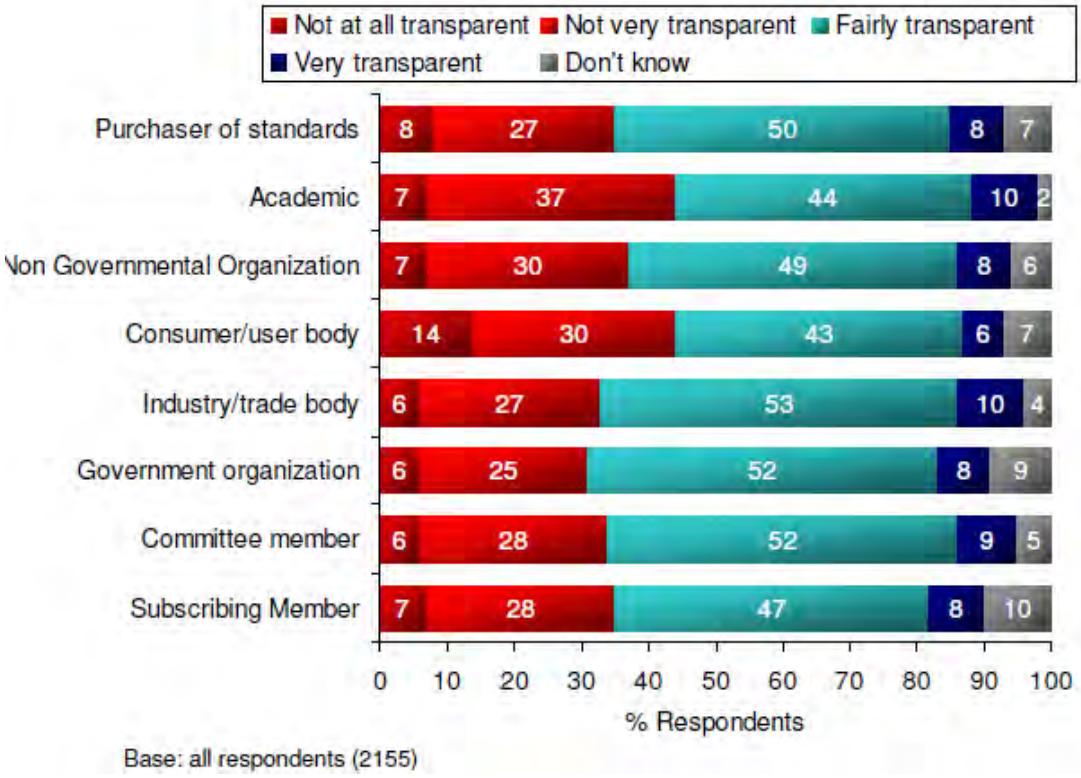
NWML:

Service Type	Percentage for the service used during the year
Calibration	36.4%
Certification Services (Accredited Certification Body)	30.9%
Product Certification (Type Approval)	**47.3%**
Enforcement	11.8%
Legislative & Policy	13.6%
Training	10.0%
Consultancy	8.2%
International	0.9%
Utilities (Gas & Electricity Meters)	0.0%

UKAS

- 40% thought the service had improved last year compared with the previous year; 51% thought there had been no change.
- 91% were satisfied/very satisfied that UKAS understood their business needs
- 92% were satisfied/very satisfied that the application of accreditation requirements was consistent with the previous year

BSI – processes and ease of use is illustrated below:



Annex 14: The International picture – commissioning questionnaire

16 November 2009

Dear

I am writing to seek your help with a project on the UK Innovation Infrastructure which we have started in BIS.

You may be aware that the "innovation ecosystem" concept has been around for some time now, indeed there are various US and EU bodies, websites and blogs dedicated to mapping and debating it, posing questions about shared mandates and institutional perspectives. Lord Sainsbury coined the term in the 2007 "Race to the Top" report (and asked for better alignment and coordination), and innovation ecology was further mentioned last year in "Innovation Nation" 2008.

Objectives

We feel it is the right time to revisit this area in the UK, to try to answer questions in three main areas:

- **Policy impact**: do we need more shared **strategic purpose**? Are we sufficiently able to work alongside and "deploy" the delivery bodies within the UK‟s "innovation ecosystem" to support the Government‟s overarching policy and create more of a **coherent system**?

- **Customer delivery**: are the customer "front ends" (and signposting between bodies) arranged so as to optimize access for customers, to answer questions at the right level of depth at the right time? Is there a case for a new **business support product,** or would this be contrived? Who do customers trust? Do we connect our customer intelligence into policy-making or foresight activity?

- At a time of rapidly shrinking budgets, pressure to simplify, innovate and transform channels, brands and organisations, what does the above work tell us about the sensitive issue of **institutional arrangements**? What does the **economic impact** evidence tell us about investment choices and UK relative advantage globally?

Bay 383, 1 Victoria Street, London SW1H 0ET
http://www.bis.gov.uk/

Direct Line +44 (0)20 7215 5425 | Fax +44 (0)20 7215 2635
Enquiries +44 (0)20 7215 5000 | Email christine.hewitt@bis.gsi.gov.uk

Scope

We propose that this new infrastructure work extend to IPO, BSI, UKAS, NMO, Design Council and NESTA[3], and their links with BIS, other departments, Regional Development Agencies and the Technology Strategy Board. (We propose that it does NOT cover the other elements of the wider "innovation system" e.g. Research Councils, HE, (non-NPL) Public Sector research establishments, nor finance, tax and skills bodies.) Many of these innovation system bodies are part of the UK's regulatory infrastructure, the knowledge transfer and business support infrastructure, and to some extent part of the UK science base and wider PSRE network (e.g. NPL). Some also give policy advice (e.g. NESTA) as well as delivery. There are widely different funding and governance frameworks (e.g. BSI and UKAS are private sector companies) and various complex policy issues concerning their services to customers. Some bodies have large long-lived scientific facilities – national assets which need to be exploited (and positioned) to best effect. There are also different spatial dimensions – with most of the bodies operating at different levels e.g. with regional, national, EU and global policy interactions and customers.

It is therefore a complex task to analyse their aggregated impact and identify a coherent strategy (over and above the individual organisational rationales) and to devise appropriate linkages and possible promotional messages.

What are we asking of you?

We have requested a variety of information from the innovation system bodies here in the UK, but we also need to „bench mark" these activities against those undertaken in other countries with innovation ecosystems. We would like to be able to make comparisons with how they structure these things in similar countries.

In conclusion, we would very much appreciate responses you could give us to the questions in the attached annex, in as much detail as you can in the timescale provided.

Timing

As noted above, this piece of work is being done in tandem with the preparation of the 2nd Annual Innovation Report and alongside a policy "refresh" of "Innovation Nation" eighteen months on. We are therefore aiming for an initial compilation by the **end of November**.

Please can we have **replies by 1 December.** We do appreciate that this is tight, but unfortunately it is dictated by the timetable we have to work to.

[3] IPO – Intellectual Property Office, BIS Department for Business Innovation and Skills, UKAS – United Kingdom Accreditation Service, NMO – National Measurement Office, NESTA – National Endowerment for Science, Technology and the Arts

Any of the project team would be happy to discuss this project – we are Chris Hewitt (BIS 0207 215 5425), Robin Webb (IPO 01633 813535 /07786 961189), Jo Symons (NMO 020 8943 7253), Mark Beatson (BIS 07823 535263), Guy Robinson (IPO 01633 813732 / 07833295526), and Karl Willes (BIS 02072155655 / 07932402428).

Yours sincerely

Guy Robinson

Guy Robinson
Head of Business Support Policy, IPO

Annex A (to questionnaire)

Which Ministry or Ministries have responsibility for Innovation Policy?

Which body or bodies performs the functions of:

1. The IPO (granting IP rights, and leading on IP policy)

2. The Design Council (supporting business to make best use of design)

3. UKAS (national accreditation body recognised by government)

4. NMO (provides measurement infrastructure)

5. NESTA (endowment devoted to innovation)

6. Regional Development Agencies (support business development and competitiveness on a regional basis)

7. Technology Strategy Board (promoting technology-enabled innovation)

Additional questions

a. In each case, are there other functions the analogous bodies perform as well?

b. What is the view among policy-makers and commentators as to how well these arrangements work?

c. What comments would you make on these arrangements from the perspective of the three areas of questions outlined in the letter above?

Annex 15: Summary of each of the NI6 organisations

BRITISH STANDARDS INSTITUTION (BSI GROUP)

INTRODUCTION

Originating as the world‟s first national standards body, BSI Group was founded in 1901 and provides a gateway to European trading with CE marking and Notified Body status against 17 European Directives. First registered in 1903, BSI's Kitemark® is the UK's oldest and best known product quality mark. Its Entropy Software™ is used by leading organisations at over 14,000 sites worldwide to improve their business performance and manage their risks. BSI has been independently voted a UK Business Superbrand every year from 2003 to 2009.

PRINCIPAL ACTIVITIES

The Group‟s key offerings are:

- The development and sale of private, national and international standards and supporting information
- Second and third-party management systems assessment and certification
- Testing and certification of products and services
- Performance management software solutions
- Training services in support of standards implementation and business best practice

A joint statement of the public interest and Memorandum of understanding exist between BSI and the BIS. This covers:

- The Government's general policy on matters relating to standards-making (but not on the individual standards); and
- The Government's relations with the British Standards Institution (BSI) and its funding of BSI's standards development work, including support for delegations representing the UK at overseas standards meetings and for consumer representation in standards-making activities.

GENERAL INFORMATION

BSI Group HQ is based in Chiswick, west London and the Group has 2,445 staff operating in over 100 countries in 50 global offices. These are deployed as follows: 55 per cent in Europe, Middle East and Africa; 16 per cent in the Americas and 29 per cent in Asia. Group revenue in 2008 was £202.3m. BSI publishes c.2,000 standards each year and has clients at 60,000 sites in more than 120 countries.

THE DESIGN COUNCIL

INTRODUCTION

Created in 1944, the Design Council is the national strategic body for design. Its mission is to inspire and enable the best use of design to make the UK a more competitive, creative and sustainable nation. The Design Council is an executive non–departmental public body funded with an annual grant from the Department for Business, Innovation and Skills (BIS) with co-sponsorship from the Department for Culture Media and Sport (DCMS). In 2008-09 the Design Council received £6.275m in grant in aid. It also generates income from other sources and for the year 2008-09 incoming resources for the year were £8.581m and total resources expended were £8.485m. The Design Council was incorporated by Royal Charter in 1976 and is a registered charity.

PRINCIPAL ACTIVITIES

The Design Council runs practical programmes for business and for the public, design and education sectors. It acts as an adviser to Government on design matters, seeking to inform Government policy where design can best and most profitably be used.

The Good Design Plan, published in April 2008, sets out the Design Council"s strategic direction for the CSR 2007 period, 2008-2011. It contains 5 objectives and 12 underpinning targets:

Objective 1: Build the UK"s capacity to innovate and deliver world-class brands, products and services by supporting the effective use of design in business and the public sector

- Extend Designing Demand to benefit business across the UK.
- Develop a specialised version of the Designing Demand Innovate service for universities to enable technology transfer.
- Develop a transformational programme to support public service innovation.

Objective 2: Drive the development of new solutions to UK social and economic challenges and involve communities in designing local services.

- Ensure that Designs of the time (Dott) has local and national impact and legacy.

Objective 3: Boost high-level skills in design to support a competitive creative economy and a thriving UK design sector.

- Launch a national Design Skills Alliance in collaboration with Creative & Cultural Skills and the design sector.

Objective 4: Champion the value of good design and its importance to social and economic success.

- Deliver an annual review of existing and new design policy.
- Raise awareness of sustainable „good" design through a public promotion programme
- Expand our research and knowledge programme, including a national research forum.
- Support the design industry and promote design awareness by launching an annual series of international conferences and seminars.

Objective 5: Be recognised as an exemplar design institution for our influence, impact and enterprise.

- Build our reputation as a leader in our field across design, business, government and education at home and abroad.
- Operate as an efficient, effective and environmentally responsible public body providing good value for money to the tax payer and a positive working environment for our team.
- Multiply our grant-in-aid support from BIS through an entrepreneurial approach that attracts additional public and private funds.

GENERAL INFORMATION

The design Council is based in Bow Street, London and employs approximately 60 staff members, including specialists in design, business change management, education, research, public affairs and communications.

Over the last four years, the Design Council succeeded in multiplying its income eight-fold, i.e. for every £1 of grant-in-aid, it raised £8 of further funding for its programmes. It achieved a four-fold increase in the number of businesses that it worked with, and a near four-fold increase in the number of people engaged in the Design Council"s activities.

THE INTELLECTUAL PROPERTY OFFICE

INTRODUCTION

The Patent Office was established in the mid-nineteenth century with responsibility for the granting of patents of invention. During the 1870s it acquired the responsibility for registering trademarks and industrial designs, when the Trade Mark Registry and Designs Registry were transferred to it. At that time it was part of the Board of Trade.

The Patent Office became an Executive Agency of the then Department of Trade and Industry in 1990 and acquired trading fund status on 1 October 1991. The Patent Office took on the operating name of the Intellectual Property Office (IPO) on 2nd April 2007. The IPO is now an executive agency of the department for Business, Innovation and Skills (BIS).

STATUTORY BACKGROUND

Major UK legislation under which the Office operates includes: the Patents Act 1977 as amended by the Copyright, Designs and Patents Act 1988, the Patents Act 2004 and the Regulatory Reform (Patents) Order 2004; the Trade Marks Act 1994; and the Registered Designs Act 1949 as amended by the Copyright, Designs and Patents Act 1988.

PRINCIPAL ACTIVITIES

The IPO facilitates the growth creativity and innovation of industry and commerce through the development and exploitation of intellectual property rights relating to copyright, patents, trademarks and registered designs. These rights play a key role in fostering innovation and competitiveness and are governed by a complex framework of national and international law. Seeking further international harmonisation of rules and procedures is a principal objective of the Office, as is the modernisation and simplification of intellectual property law.

The IPO"s role has four key pillars: Improving our understanding of the role intellectual property plays in Britain"s economic life, and in the competitiveness of UK"s businesses; Continued excellence in delivering individual rights: patents, trademarks and registered designs; Shaping the policy environment on IP, particularly in Europe and internationally on IP issues, and Reaching out more effectively to individuals and individual companies in the UK to help them better understand, manage and benefit from IP effectively.

GENERAL INFORMATION

The Intellectual Property Office is principally based in Newport South Wales but also has offices in Bloomsbury Street, London. 990 staff members were employed by the Office on 31 March 2009.

Trademarks – brand name protection – this department employs around 70 examiners tasked with ensuring that trademarks comply with the Trademarks act.
Patents – Technology protection – this department employs around 200 examining staff who ensure inventions are new and inventive and conform with the Patents Act.
Designs – Protects a products looks – This department employs around five examiners that ensure the design complies with the Registered Designs Act.
Copyright - any literature or artistic work automatically enjoys copyright – there is no copyright register, as it is a right; instead this area forms one of the largest policy areas in the IPO. Annual turnover in the same period was £61 Million.

NATIONAL ENDOWMENT FOR SCIENCE TECHNOLOGY AND THE ARTS

INTRODUCTION

The National Endowment for Science, Technology and the Arts (NESTA) is an executive non-departmental public body sponsored by BIS. It uses an endowment from the National Lottery, currently valued at £327m (March 2009) to deliver its mission to transform the UK"s capacity for innovation by investing in early stage companies, informing innovation policy and encouraging a culture that helps innovation to flourish. NESTA was established by an Act of Parliament in 1988 to be independent of Government, with the Board of Trustees taking decisions on grants, projects and programmes. Government Ministers appoint the Board of Trustees and NESTA is required to operate within the framework of the National Lottery Act 1988.

STATUTORY BACKGROUND

The statutory objects of NESTA are to support and promote talent, innovation and creativity in the fields of science, technology and the arts.

PRINCIPAL ACTIVITIES

NESTA"s mission – to transform the UK"s capacity for innovation is delivered in 3 main ways:

NESTA's Programmes: aim to demonstrate how to support and stimulate innovation. NESTA operates a variety of programmes which instil the skills & attitudes required for innovation, develop business support for creative and social entrepreneurs and use incentives to stimulate innovative solutions to societal issues. An example of this is the Big Green Challenge, a £1 million prize fund to stimulate community innovation in relation to climate change.

NESTA Investments: Combining investment with non-financial support (e.g. mentoring) to help companies turn their innovative ideas into commercial successes, and also encourage other investors to generate a commercial return by replicating its investment models.

NESTA's Policy and Research Unit: aims to shape innovation policies to help the UK meet the innovation challenges of the 21st century. It supports this by increasing the quality and quantity of research in innovation through its own research; connecting centres of excellence and commissioning targeted research from leading academic and policy institutes; developing outstanding innovation policy and promoting a strong pro-innovation policy agenda across the UK; and building a national network of leading thinkers in innovation.

GENERAL INFORMATION

NESTA is principally based in Plough Place, London but also has a presence in Scotland, Wales and Northern Ireland. 82 staff members were employed by NESTA on 31 March 2009.

In 2008/09 NESTA made 19 investments totalling £2.9m to help early stage companies and NESTA investments" companies attracted private sector funding at the ration of over 9:1 for every £ invested by NESTA.

NATIONAL MEASUREMENT OFFICE

INTRODUCTION

The National Measurement Office (NMO) is an Executive Agency of the Department for Business, Innovation and Skills. It has operated on a net running cost Agency basis since April 1996. NMO ensures that the UK"s system of weights and measures is fair, accurate and legal so that consumers and businesses can be confident that they are operating in a fair marketplace. NMO is also responsible for all aspects of the National Measurement System (NMS), which includes investment in the UK"s scientific measurement infrastructure and research programmes. The NMS is responsible for stimulating good measurement practice and enabling business to make accurate and traceable measurements, for the benefit of the nation.

NMO"s mission is to provide a measurement infrastructure which supports innovation, facilitates fair competition, promotes international trade and protects consumers, health and the environment.

STATUTORY BACKGROUND

NMO"s principal policy responsibility arises from the Weights and Measures Act 1985 which helps ensure consumers and businesses remain protected against short measure and other offences. NMO"s legislative portfolio now includes responsibility for gas and electricity metering and hallmarking

PRINCIPAL ACTIVITIES

The NMO is responsible for the administration of weights and measures legislation and the fulfilment of a number of statutory functions on behalf of the Secretary of State. It also has an international role, representing the UK in several international organisations and working to develop straightforward regulation. NMO services allow businesses to validate new and innovative products to ensure they get to the international marketplace quickly.

The NMO also provides advice to Ministers on measurement issues, particularly in relation to the Weights and Measures Act, and it carries out the calibration of Trading Standards Departments" standards of mass, length and volume.

The NMO is one of the national measurement institutes belonging to the UK"s National Measurement System. Since April 2007 it has also had responsibility for sponsorship of the British Hallmarking Council and the legislation under which it operates.

GENERAL INFORMATION

NMO operates from a purpose-built laboratory in Teddington, Middlesex. It employs around 49 staff and in 2008/09 total income was £4.5million (63% of this was derived from the NMS legal metrology programme).

UNITED KINGDOM ACCREDITATION SERVICE

INTRODUCTION

UKAS is the UK's National Accreditation Body and is sponsored by BIS. Established in 1995, UKAS was formed from the merger of the National Accreditation Certification Bodies and then National Measurement Accreditation Service. It is the sole national accreditation body recognised by government to assess, against internationally agreed standards, organisations that provide certification, testing, inspection and calibration services.
UKAS is a non-profit-distributing company, limited by guarantee, and operates under a Memorandum of Understanding with the Government through the Secretary of State for BIS. The recognition that this MoU provides underpins UKAS' unique position within the UK, and demonstrates the national recognition that UKAS enjoys, which is essential for membership of the European co-operation for Accreditation (EA) and the international associations of national accreditation bodies.
UKAS accreditation provides an assurance of the competence, impartiality and integrity of conformity assessment bodies. UKAS accredited certification, testing and calibration and inspection reduces the need for suppliers to be assessed by each of their customers. UKAS' involvement in international groups provides for mutual recognition which further reduces the need for multiple assessments of suppliers and as a consequence helps to reduce barriers to trade. BIS therefore recommends the use of UKAS accredited conformity assessment services whenever this is an option.

PRINCIPAL ACTIVITIES

UKAS" principal activities are wide-ranging but can broadly be grouped into five areas of activity:

1. **Assessment and Accreditation** of independent evaluating organisations, such as laboratories, certification bodies, inspection bodies and proficiency testing scheme providers.
2. **Development** of new areas of accreditation under a new product development programme.
3. **Assessment and recommendation** of organisations (on behalf of the relevant government department) to become Notified Bodies.
4. **Specialist training** and advice.
5. **Raising awareness** of accreditation and the value of using accredited services within central and local government, SMEs and among key specifiers.

GENERAL INFORMATION

UKAS HQ offices are based in Feltham, Middlesex. It employs around 140 staff including technical and specialist professionals and support staff and has a database of around 350 subcontractor assessors and technical experts. Annual turnover is in excess of £12m.

UKAS currently accredits the following (its direct customers):

- Around 1500 laboratories
- Over 130 Certification Bodies
- Over 250 Inspection Bodies
- Around 10 Proficiency Testing Providers
- Around 6 Reference material Producers.

It has also formed a partnership with Clinical Pathology Accreditation (CPA) UK Ltd on the accreditation of medical laboratories and external quality assurance schemes to internationally accepted standards.

Annex 16: Project Organisation Structure

Project Management Board & Team Structure

Simon Edmonds, Director of Innovation, BIS - Senior Responsible Owner
Chris Hewitt, Deputy Director, Innovation Delivery, BIS
Robin Webb, Innovation Director, IPO
Mark Beatson, Head of Science & Innovation Analysis, BIS
Jo Symons, Director of Strategy, NMO
David Keenan, HMT

Project Management Team

Chris Hewitt, BIS
Robin Webb, IPO
Mark Beatson, BIS
Jo Symons, NMO
Sarah Webb, BIS
Guy Robinson, IPO
Nigel Pargiter, Smarter Govt, BIS
Karl Willes, BIS

Project Inner Group

Stian Westlake, NESTA
David Godber/Mel Taylor, Design Council
Malcolm Hynd, UKAS
Mike Low, BSI

Project Outer Group

Tim Goodship, BIS
Simon Chater, BIS
Daniel Mansfield, BSI
Mat Hunter, Design Council
Julian Braybrook, LGC
Neil Harris, LGC
Robert Gunn, NMO
Niall Boyle, NMO
Brian Bowsher, NPL
David Nettleton, NPL
Graham Torr, NPL
David Mulligan (RIST) RDAs
Ann Johnstone, SEEDA
David Evans, TSB
David Golding, TSB
Ian Gray, TSB
Brian Millington, TUV NEL
Steve O"Leary, UKTI

Annex 17: Commissioning questionnaire to NI6 organisations

Dear

I am writing to seek your help with - and direct involvement in - a project on the UK Innovation Infrastructure which we have just started in BIS.

You will be aware that the “innovation ecosystem” concept has been around for some time now, indeed there are various US and EU bodies, websites and blogs dedicated to mapping and debating it, posing questions about shared mandates and institutional perspectives. Lord Sainsbury coined the term in the 2007 “Race to the Top” report (and asked for better alignment and coordination), and innovation ecology was further mentioned last year in “Innovation Nation” 2008.

Objectives

We feel it is the right time to revisit this area, to try to answer questions in three main areas:

- **Policy impact**: do we need more shared **strategic purpose**? Are we sufficiently able to work alongside and “deploy” the delivery bodies within the UK‟s “innovation ecosystem” to support the Government‟s overarching policy and create more of a **coherent system**? For example have we drawn sufficiently upon their expertise in the New Industry New Jobs strategy or in the **emerging technology areas** chosen by TSB? Might **raising awareness** of the national innovation ecosystem - its infrastructure and its connections - itself be a policy objective worth exploring?

- **Customer delivery**: are the customer “front ends” (and signposting between bodies) arranged so as to optimize access for customers, to answer questions at the right level of depth at the right time? Is there a case for a new **business support product,** or would this be contrived? Who do customers trust? Do we connect our customer intelligence into policy-making or foresight activity eg what does sectoral patent or design mark data, or purchasing patterns of sectoral BSI standards tell us?

- At a time of rapidly shrinking budgets, pressure to simplify, innovate and transform channels, brands and organisations, what does the above work tell us about the sensitive issue of **institutional arrangements**? What does the **economic impact** evidence tell us about investment choices and UK relative advantage globally?

The project deliverables will include a set of policy papers in each area, and a section in the 2nd Annual Innovation Report.

Scope

We propose that this new infrastructure work extend to IPO, BSI, UKAS, NMO, Design Council and NESTA, and their links with BIS, other departments, Regional Development Agencies and the Technology Strategy Board. (We propose that it does NOT cover the other elements of the wider "innovation system" eg Research Councils, HE, (non-NPL) Public Sector research establishments, nor finance, tax and skills bodies.)

As you are well aware, many of these innovation system bodies, including your own, are part of the UK"s regulatory infrastructure, the knowledge transfer and business support infrastructure, and to some extent part of the UK science base and wider PSRE network (eg NPL). Some also give policy advice (eg NESTA) as well as delivery. There are widely different funding and governance frameworks (eg BSI and UKAS are private sector companies) and various complex policy issues concerning their services to customers. Some bodies have large long-lived scientific facilities – national assets which need to be exploited (and positioned) to best effect. There are also different spatial dimensions – with most of the bodies operating at different levels eg with regional, national, EU and global policy interactions and customers.

It is therefore a complex task to analyse their aggregated impact and identify a coherent strategy (over and above the individual organisational rationales) and to devise appropriate linkages and possible promotional messages.

What are we asking of you?

We hope you agree that the above questions are worth addressing, and that you are happy to work with our project team to debate the issues in more detail and to help us collect information in the areas above.
In conclusion we would very much appreciate:

a) A representative from your organisation to join the project advisory group (if not already represented) and

b) Your teams to try to answer the questions in the attached annex, in as much detail as you can in the timescale provided. (We respect commercial confidentiality in some areas).

Timing

As noted above, this piece of work is being done in tandem with the preparation of the 2nd Annual Innovation Report and alongside a policy "refresh" of "Innovation Nation" eighteen months on. We are therefore aiming for an initial compilation and "round table" presentation and discussion of evidence by the **end of November**.

We are seeking to arrange a round-table event – probably 10am-3pm, to be held in Teddington, where each of you can present your input. We will get back to you with event details as soon as possible.

Meanwhile please may I ask for nominated representatives by the end of October and **written replies by Friday 27th November at the latest, and earlier if this is at all possible.** We recognise that this is a very busy time of year for all of you, and that the questions may require significant digging in some cases. But we feel that this project will be very important in preparing our ideas and options for the "innovation ecosystem" for both current and future Ministers.

Any of the project team would be happy to discuss this project – we are Chris Hewitt (BIS 0207 215 5425), Robin Webb (IPO 01633 813535 /07786 961189), Jo Symons (NMO 020 8943 7253), Mark Beatson (BIS 07823 535263) and Guy Robinson (IPO 01633 813732 / 07525 238978.)

Yours sincerely

Christine Hewitt
Deputy Director, Innovation Delivery

a) How your work maps onto the New Industry New Jobs Strategy (NINJ)

1. Please describe your involvement in the development of NINJ and in its associated strategies (Advanced Manufacturing, Low Carbon Industrial Strategy, Life Sciences Blueprint, Digital Britain etc.)

- Your involvement in the process of developing these documents (if any)

- Policies announced in these documents directly affecting your organisation

2. Please describe briefly how your "business as usual" activities affect the areas of the economy discussed in NINJ and associated strategies

- Where possible, provide statistics on sector breakdown of activities

3. Do you think there are additional ways in which your organisation's activities could support the NINJ agenda?

b) Customer information

1) Please describe the main features of your customer base

- Who you see as your customers

- Available information on numbers, characteristics etc.

- Please summarise any analysis you have carried out of your customer base and their requirements [e.g. customer segmentation, customer journey mapping]

2) Please describe the information you collect - and how you use it - arising from your interaction with customers in delivering your objectives

- What information do you collect from customers in providing services - both "soft" and statistical?

- How is this information stored, shared and used?

3) Please describe how you seek feedback from your customers and how you use feedback to improve policy and/or service delivery

- What data do you collect from customers on the quality and impact of your activities (e.g. satisfaction surveys, in depth evaluations)?

- What use does your organisation make of this information?

- How do you involve customers in your improvement processes?

4) Thinking about information collated under headings 1 to 3, is this information made public and/or shared with others? Is there scope for greater information sharing? If so, are there any barriers?

c) Economic Impact Evidence

We already have a range of recent studies in the BIS Analysis Team on the economic impact of your organisations and their policies and services, but if you think there is additional evidence we should be aware of, please send this too.

NB We are aware that the BIS Service Transformation Team may have recently asked you for information on "channel width" (i.e. mix of service delivery between online, phone etc). Obviously we want to avoid asking questions twice, so please feel free to send us anything you have “pre cooked” – but the background to the two pieces of work is very different, with this one very much in the innovation arena.

Annex 18 - Piloting a Sectorally Tailored NI6 Offer – London Design Week Sept 2010

Recommendation No 2 proposes that the NI6 work together in key sectoral areas to pilot a more joined up "offer", either face to face at existing or new events or on the web.

Here we propose one opportunity to practice doing this at a face to face event:

London Design Festival runs from 18-26 September 2010, focussing on "Design for Economic Growth, Social Progress and Environmental Stewardship".

During the week numerous companies, international visitors, designers, their respective supply chains in the form of model makers, prototype makers, printers, packaging specialists and others will be in London visiting various installations at a range of venues (V&A, Design Museum, RCA etc.) meeting with UKTI, attending talks, lectures and events etc.

It is proposed that, with UKTI support, the NI6 assemble a couple of days at the BIS Conference Centre, where the innovation family members present their range of services to industry and the audience. We propose that DC could Chair, with contributions from the IPO, NPL, TSB, BSI, as well as the British Brands Group re: intangibles. A joint session would run 4 times, over two consecutive days.

The autumn timing gives NI6 bodies time to prepare engaging presentations, geared to communicating their respective roles and provided services, with appropriate "way finding" to resources after the event via a "goody bag". There could also be breakout seminars in parallel where „advisory services" could be located, e.g. the IPO having a room set aside for enquiries and assistance.

For international visitors (UKTI invited) it would demonstrate the joined-upness of the UK innovation landscape, and also how Design plays a pivotal role.

The conference facility could be appropriately decorated, maybe with some examples of British Car Design in the lobby parking area as an exhibit, really bringing 1VS to life. UKTI and the various partners would be able to contribute to the overall scene setting.