



# Developing inclusive design expertise within a client/consultancy relationship



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## ABSTRACT

TheAlloy have been working together with British Telecom (BT), as their product design consultants, for over ten years. During that time BT have undergone a key transformation which has had a profound impact on their design focus. This transformation has seen BT actively embrace inclusive design as a core driver for their business objectives. As part of that journey, TheAlloy have in turn developed core competencies which have not only supported BT's transition, but impacted the consultancy's ability to offer these services to other clients. This paper reflects on the development of that relationship and those competencies through a series of project case studies.

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## 1. Background

The mainstream telecoms industry can be characterised as follows:

- Fast moving
- High volume (i.e. a large market)
- Competitive
- Regulated (Nationally & Internationally)
- Standards based (this allows interoperability of telecoms equipment across the World)
- Growing pressure on margins

Therefore, any product has to be seen in this highly competitive and complex context. However, in addition to this, many countries historically will have had an incumbent 'telco' (a telecoms provider owned by the government). Being government owned these 'telcos' would have had a broader remit beyond a commercial one to address wider social issues. This situation has resulted in the provision of special products, services and support. Examples of this include BT's Text Relay service, which is operated by the Royal National Institute for the Deaf (RNID) and funded by BT. Using text-phones and Text Relay assistants it helps deaf, deaf-blind, hard of hearing and speech-impaired people make and receive calls with hearing people. As such, telcos, particularly those that were state

owned, have ended up with a split provision between mainstream and disabled consumers. This situation has continued through the influence of regulation.

Inclusive design however brings a fresh perspective to this. By considering capability variation across the population it highlights the fact that there are many consumers, who although not classified as disabled, still have difficulty using telecommunications devices. This may be due to the cognitive demands of a user interface, or difficulties caused by moderate loss of hearing or vision.

This offers an opportunity for products in the mainstream to complement existing special products and services. The BT Big Button phone in its various forms has become a key exemplar of inclusive design by delivering products that sit with in the mainstream but include users with minor and moderate capability loss. However, BT has seen the opportunity for inclusive design beyond this and has embedded inclusive thinking and practice into its development process. It now talks of products that have come through the process as opposed to talking about inclusive products as isolated examples.

As part of this process BT has supported the development of the Inclusive Design Toolkit (Clarkson et al., 2007) which provides a valuable resource for organisations that want to design inclusively.

## 2. BT and TheAlloy

TheAlloy are a team of design consultants specialising in product design, interaction design and strategic innovation. For the past 10 years, TheAlloy have been retained by BT for whom they have completed over 100 projects. These projects range in scope from

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core fixed line telephones, to broadband products such as the BT Home Hub (Fig. 6) and new business propositions such as the BT Baby Monitor.

TheAlloy use their alliance with BT as an exemplar to potential clients for how a client/consultancy relationship can develop over time to mutual business and intellectual benefit. This is illustrated through the development and commercial success of BT's portfolio, which has shifted over time from one that included products addressing 'special needs', to a much more mainstream inclusive design approach.

The consultancy relationships extend beyond specific product development teams to include propositions, brand, internal design and usability experts, with the latter involved to ensure that every product complies with BT's Consumer Centric Design (CCD) agenda. In addition to developing their own tools, TheAlloy utilise the BT inclusive design toolkit and utilise personas created by the usability team that deliberately and actively include those with varying degrees of impairment and ability.

A number of key design projects illustrate the co-development of client and consultancy understanding and expertise in inclusive design over a ten year period. Beyond this window, there are two key projects which support the full story of BT's mainstream adoption of inclusive design.

### 3. 1990: The BT identity and key-top

Designed pre-TheAlloy in 1987 by Gus Desbarats (now Chairman) the BT identity was created to deliver comfort and usability in order to drive call usage and revenue. Within that identity, there were three core elements: the key-top, the use of full text key legends and key 'clustering', i.e. the use of location, form and pitch to visually connect alternative control choices for each interaction. These usability principles are still reflected today in the BT inclusive design toolkit.

There were two objectives for the key-top design; first to create a design element that BT could 'own' and would act as an identifier for the brand; second, to provide the end-user with a significantly better in-use experience. At this point in time, key forms fell into two camps, 'domed', or 'dished' designs. Qualitative research had shown that there was a very even split in user preference between them, suggesting that neither was optimum. To try and identify an optimum design qualitative research with around 20 respondents of 50/50 gender split revealed what lay behind the expressed preferences. It was found that fast diallers liked dished keys, whilst those with long fingernails preferred domed. Analysis revealed that speed was related to 'side to side' movements, whilst fingernails represented a 'front to back' issue. It was believed that both issues could be addressed with a single topology (Fig. 1) that would support the finger when on the key, yet allow for variances in fingernail length. The resultant 'saddle' design works across almost any size or shape of key, making it both faster as well as more comfortable and easier to use. Used on all fixed line products, the BT key-top design has been applied to over 50 million telephones and remains a core element of the fixed line identity.

### 4. 1992: BT Converse 200

The Converse 200 (Fig. 2), is a telephone designed specifically for the older and less able user. It was also designed to appeal beyond this to a broader range of consumers Designed according to guidelines drawn up by a group at BT called the 'Age and Disability Unit' (ADU), it sold many millions of units over an 8 year period.

In order to address the needs of its target market, the design includes a number of key elements targeted with significantly improving usability. The telephone not only utilises the BT key-top,



Fig. 1. The BT key-top.

but allows for much larger keys offering a larger 'hit' area and an increased pitch to minimise inadvertent key presses. The graphics are enhanced to increase legibility, graphics increased in size by 25% and the tonal contrast between key and graphic increased. Key graphics are printed light on dark keys, in line with RNIB recommendations (RNIB). To boost audio performance, the product includes an induction loop to enable hearing aid compatibility and an illuminated amplify key, which boosts volume beyond the standard settings. To accommodate those with reduced dexterity, the handset is chunkier, with increased volume at the ear and mouth and a more pronounced longitudinal curvature; changes designed to improve handset pick-up, positioning and grip.

This product represents a unique 'collision' at that time between BT's social responsibilities and the commercial pressure to make sure that whatever products were designed, appealed to as many people as possible. The Converse achieved this with strong appeal in the 'heavy use' markets such as business and hospitality, groups who purchased it for its robustness and ease of use. In this context, the Converse 200 characterises the start of BT's inclusive design journey.



Fig. 2. BT Converse 200.

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