

BT dials into e-learning success

Background

In 2005 a set of legally enforceable Undertakings, referred to in this case study as “the Undertakings”, were agreed between BT and Ofcom, the independent regulator and competition authority for the UK communications industries. The Undertakings set out, among other things, how BT would restructure in order to ensure a more level playing field for all its wholesale customers.

BT now comprises BT Retail, BT Wholesale, BT Global Services and Openreach, the intention being that there should be a high degree of separation between Openreach and the rest of BT. As part of this separation, Openreach re-branding of offices and vans has commenced and some Openreach employees have moved to separate buildings to provide them with their own physical space instead of sharing offices. In addition, there are strict rules limiting what information BT Wholesale and Openreach employees can share with each other and the rest of BT.

This high-profile activity had to be communicated within BT so that every employee understood what was happening, why it was happening and the modifications required to their working practices in order to comply with the Undertakings. Therefore, the whole organisation – more than 100,000 people – had to have mandatory training as quickly as possible after the date the Undertakings were finally agreed, the end of September 2005.

Thirteen different variations of a computer-based e-learning course were deployed to ensure the message was tailored to different audiences within BT and to aid understanding and application in the workplace.

However, one important audience needed particular attention – BT’s 30,000 engineers. These engineers are mostly on the road, in vans, and they spend a great proportion of their time dealing with customers face-to-face. No-one is there with them on the door-step, monitoring what they say. Yet the Undertakings require engineers to act in a way that is appropriate to an organisation that treats all Communications Providers equally. This meant that BT wanted to remind and reinforce with the engineering workforce the behaviours required to ensure compliance.

The engineers were therefore at the heart of the change required and it was imperative that they were trained effectively so BT could comply with the Undertakings. To get the training wrong and have engineers “off message” would be high-risk and potentially lead to negative consequences for BT as a whole.

So how could BT ensure an effective training intervention for this group of individuals?

The Options

There were a number of potential strategies BT could use to train the engineers. Each could be considered and discounted as follows:

1. To roll out a tailored version of the computer-based training, as for other BT employees

E-learning is often seen as the ideal solution for training field employees and teleworkers. However, a focus group in October 2005 had discovered that BT engineers find computer-based e-learning difficult to complete. They often do not have the bandwidth or technology to access e-learning optimally on the road or in their own homes. Nor do they have the time in their work schedules to complete what is often an hour of e-learning in an office environment, in between appointments, as this additionally incurs travel time adding to the expense and impact on productivity.

The fact that the engineers are a higher risk audience in terms of compliance with the Undertakings and being particularly time-constrained - as the roll-out coincided with the period of poor weather where they are often required to address issues arising due to inclement weather - means that it is important that training is specifically tailored to their individual needs.

Therefore, the disadvantages with this option were:

- The engineers might not find enough time in their schedules to complete a CBT course and therefore would not be trained within the required timescale.
 - The engineers might not have the optimal software on their laptops or the right bandwidth available to permit prompt and free flowing completion of the training.
 - An existing psychological barrier – e.g. e-learning fatigue and a perception that the CBT would perhaps be difficult to complete or not sufficiently tailored might mean the learning would not be absorbed properly – a danger for a project of this importance.
2. To provide classroom-based training, which is effective and popular with the target audience

In the focus group noted above, engineers were asked to identify their ideal mode of learning – most stated a preference for face-to-face training.

The disadvantages of this were:

- The travel and training time required for this option would have taken engineers away from the field for a substantial period and so might have adversely impacted BT's ability to deliver optimal customer service.
 - It would have proved difficult to train all 30,000 engineers within the requisite timescale using the classroom model, even if they were trained in large groups.
 - Face-to-face training (and associated travel and accommodation) is a costly option, particularly for such a large number of people dispersed across a large number of locations.
3. To provide the training on CD-Rom, DVD or written documentation

Any of these media could have been used to deliver information regarding the Undertakings and what the engineers needed to do to comply with them.

Random testing on training delivered in this way has shown the main disadvantages are:

- Learners often lose the document or CD, or forget they have received it, and therefore do not undertake or complete the training.
 - Learners tend to fail to read/watch it correctly and therefore fail to retain the key learning points effectively.
 - It is more difficult to test and verify learning as part of the training or to automatically log results on BT's Training Reporting System for Regulatory Compliance.
4. To provide the information via face-to-face or email Cascade Briefings

Cascade briefings are a useful means of information dissemination but in this situation the main disadvantages were:

- It would be difficult to record and verify retention of the learning.
- Engineers would need to be taken out of their normal working day to travel to face to face briefings.
- A lack of control about exactly what is communicated – the same standard and script may not be adhered to every time. This increases the chance of incorrect learning being delivered, with potentially negative results.

Back to the Future – i-Cast™

It is perhaps fitting for a telecommunications company that the answer lay in the use of the telephone.

The project owner Laura Reid, Head of Regulatory Compliance Training, Communications and Culture, BT, met with Saffron Interactive in early December 2005 to brief the team on her requirements. The solution needed to:

- Be developed and rolled out quickly
- Fit with an engineer's workload and physical location
- Deliver clear and consistent training
- Ensure a positive user experience
- Test and log learning on BT's Training Reporting System for Regulatory Compliance

Saffron had been developing at the time an offering in the area of mobile-learning (m-learning) – branded i-Cast™ - which it believed could fulfil the brief and was fully scalable to cater for 30,000 users.

Why m-learning?

M-learning offered the perfect platform for this project, as it addressed the problems identified with the other options:

- The user would be able to access the training from anywhere – in an office, a van or from home
- The learner would only require a telephone with a keypad to complete the training
- The training content would be delivered by speech, thus giving the auditory perception of face to face training identified as being preferred by the engineers
- Speech recognition software built into the solution would also enable the user to provide spoken answers to test questions, again offering a similar experience to face to face training
- The course could be developed and delivered rapidly (at the time of the discussions with Saffron, BT had just over four months to develop, roll out and complete the engineers' training)
- It was estimated that it would be possible to reduce the time required to complete the training to just under half an hour using telephone as opposed to computer-based training, thus delivering further time-efficiencies
- It would be possible to integrate the training with BT's reporting system, thus enabling automatic logging of which engineers had completed the training successfully
- It was cost efficient

Having worked with Saffron before, Laura believed in Saffron's ability to deliver a creative and effective solution using this technology. Therefore, it was decided that the mandatory training regarding "BT Undertakings" be delivered to BT's engineers in this way.

Designing the Solution

Designing the right solution for BT required Saffron to take the voice-based portal platform it had been working on, which is based on VoiceXML, and tailor it specifically for BT.

First, Saffron's instructional designers took BT's essential learning document on the subject matter – the Code of Practice Key Messages for the Engineering Community booklet - and translated it into a concise and easy-to-understand script, which was then recited by an actor and recorded onto an audio file. In this case, the training was comprised mainly of scenario-based content.

As Nick Simons, Saffron's Instructional Design Team Leader and Chief Technology Officer explains, developing content for audio training is a different discipline to providing content for computer-based training.

"With computer-based training, it's easy for the user to scroll back to look at a learning point again, if they did not quite understand it first time around. However with telephone-based training the user does not have that option and what we term the user's attention window is hugely different. Think about calling a helpline, where you must select the right option to

connect to the right person – it is so easy to become frustrated and give up if the route you need to take is not made clear.”

“For telephone training to be effective we have to avoid that, so from an instructional design perspective we need to ensure that the user is able to process the information immediately upon hearing it. Content must be crystal clear, first time, so it is important that we keep it simple, with short sentences and as little jargon as possible. We must also find exactly the right “voice” – both in the tone of the content and in selecting the person who will recite the script onto the audio file. Users deserve a quality experience, which is why we don’t use text to voice systems to deliver the content.”

Where it was necessary to test the retention and accuracy of a key learning point, that topic was translated into one of a number of questions that peppered the script. The user could respond either by pressing the keypad on a touch-tone telephone or by providing a spoken answer that would then be assessed by speech recognition software Saffron had built into the system.

Utilising speech recognition helps to maintain that fragile “attention window” referred to previously – it delivers a greater degree of interaction between the user and the training than simply selecting a number on a keypad and provides a perception of person-to-person interaction.

Saffron also designed the solution to meet the key reporting requirement – essential for BT’s ability to provide internal and external reporting. The training would record the user’s success in answering these questions correctly and register whether or not the user had completed and passed the course.

The focus group of BT engineers back in October 2005 had emphasised the need for highly tailored training – a typical quote was *“I only want to know what’s useful to me”*. Therefore, Saffron delivered three variations on the training, one for engineers within BT Wholesale, one for those within Openreach and one for those employed by BT Northern Ireland (BTNI).

For each group, the salutation they would have to adopt in greeting customers would be slightly different and there were also variations in what each group was able to discuss on the doorstep. The BTNI version was further amended to contain more ‘Irish’ names within the scenarios presented throughout the script, giving it a more ‘local’ feel.

It is possible to deliver these variations much more rapidly and cost effectively with telephone training than with traditional e-learning - the instructional design team simply tailor the scripts accordingly and each variation is recorded onto a different audio file.

Employees then dial in to the m-learning portal and access the content specific to them by using their unique personal identification number. There is no need to develop, roll out and support a number of e-learning applications.

In addition, it was recognised that the engineers might only have one opportunity to undertake the training in the midst of their work schedules, so it was essential that it was robust and reliable enough to work first time, every time. A benefit of telephone training is its simplicity, it really is as easy and consistent as making a phone call – connectivity that is generally more reliable than that of a remote computer network.

Integrating the solution

It was essential that proof of learning be assessed and recorded on BT’s Training Reporting System for Regulatory Compliance, against the correct employee ID. Results from this reporting system are used for external as well as internal compliance reporting, so it is crucial the correct statistics are registered.

To achieve this, Saffron had to work closely with BT and another supplier to BT in order to define how the training needed to interface with the reporting system through BT’s firewall. Saffron scripted code at the end of the training that would navigate the firewall and accurately log successful training interventions.

Outcome – dialing up successful e-learning

BT commissioned Saffron to develop the training in the second week of December 2005. In spite of Christmas and New Year holidays, all three variations of the m-learning course were rolled out at the start of February 2006, demonstrating the rapid development timescale achieved through the use of Saffron’s m-learning technology.

Saffron’s instructional design team took the subject matter and successfully translated it into a comprehensive yet concise script, resulting in a 28-minute training intervention. This compares favourably to the computer-based training undertaken by other employees within BT, which on average required an hour of the user’s time.

Knowing that the training required only 28 minutes, BT’s Planning Resource Managers were able to schedule a half-hour slot, earmarked for completion of the course, into the work-plan of every engineer.

As a result of this strategy – and the ease of use of the training - 29,939 engineers have successfully completed the telephone training course to date. This demonstrates that Saffron’s confidence in the scalability of its solution was well-founded.

Communications to launch the training amongst the user group were delivered through a variety of media, including newsletters, emails to line managers and cascade instructions fed through line managers to individual engineers. Finally, the issue of how to train so many people quickly was resolved by careful planning.

User testing conducted prior to the rollout and feedback solicited post-rollout, was very balanced. Overall, the training was deemed to be a success: a positive training experience that met the requirement, that was quick to complete, easy to use, simple to navigate through, intuitive and something users would use again.

For example, a sample of engineers asked for more detailed feedback during pre-launch user testing provided the following:

Metric	% replying “Yes”	% replying “No”
Were the voices clear and easy to understand?	100%	
Were you able to move intuitively through the course?	89%	
Do the interactive questions help test your learning?	96%	2%
Consider overall the sound & feel of the telephone training - is this a useful and effective way to learn?	84%	15%
Comment on the speed of the connection - at start-up or with progression through the package.	100% Found it satisfactory	

Laura Reid sums up BT’s assessment of the success of the project: *“Telephone training enabled BT to conduct a thorough and well received training intervention on a potentially high-risk subject across a large and mobile workforce. The solution was delivered quickly and cost-effectively, and was comparatively simple to tailor for different audiences. Indeed, I would definitely consider using m-learning again in the future. I believe it enables me to really target my training investment and focus in on the specific training needs of particular groups of employees.”*