Purpose

The purpose of this document is to position Business Television (BTV) as a high value strategic business support tool, which can be used to deliver education and Corporate Communications rapidly across wide geographies. By highlighting it’s potential for reducing Time to Market, advancing and expanding “windows of opportunity” for sales, and for ensuring integrity and clarity of message, it will be shown that BTV could be a major contributor to the achievement of your company’s strategy for increasing growth.

This paper will explain the nature, purpose and benefits of BTV, and show how advances in satellite and terrestrial communications technology will enable new applications that could significantly add to the existing benefits. It will also describe how these advances and the convergence of computer and television technologies can contribute to considerably reduced delivery infrastructure costs.
Overview

Business Television (BTV) is a powerful weapon in the fight for new sales. It is television with a definite purpose; the competitive edge is its main driver. It offers the ability to communicate a consistent message, to any target audience, anywhere in the world at any time of the user’s choice. Live video images have the capacity to communicate in ways that text and still images alone can never equal.

BTV is, in most respects, very similar to the broadcast television you receive in your home, especially if you have access to satellite channels. The biggest differences are in the volume and content of programmes, the target audiences and the ability to receive the transmission.

Programmes are produced using the same technologies and from similar studios to normal broadcast television. In fact some commercial television companies sell excess production and studio capacity to BTV programme makers. Equally, public television programme makers make use of commercial studios employed by BTV users.

It is, however, not necessary to originate programmes in a studio. The “outside broadcast” technology used by conventional broadcasters to bring sports programmes and special events to the home TV can also be used to deliver BTV programmes to your corporate locations. This enables the possibility of broadcasting directly from a company’s premises, or from an event, exhibition or conference centre anywhere in the world.

Public and commercial broadcast television is “on-the-air” throughout the day and night, showing a huge variety of programmes aimed at a wide spectrum of public interest. BTV programmes are broadcast at times that fit easily into the business day and are designed to fulfil specific needs that add value to a company’s business. The frequency of broadcasts is determined by the need to communicate.

Anybody can erect an aerial and receive public and commercial “terrestrial” television without restriction and, although in law you need a licence, access to the broadcasts is completely unrestricted. Equally, anybody also can erect a dish and receive commercial satellite television. Commercial television channels, or even individual programmes, can however be restricted to those who pay a subscription. This is possible because satellite television signals are encoded and may also be encrypted (scrambled). In order to receive broadcasts, it is necessary to use the appropriate proprietary decoder or possibly a commercially purchased decoder capable of using a “smartcard”. In either case, the broadcaster is able to identify each decoder that will be used to receive the programmes.

When restricted programmes are transmitted, a special code is transmitted in advance of the broadcast that “authorises” the decoders of subscribers. Once authorised, the decoder is able to interpret the encrypted signal and display a normal TV picture.

Satellite based BTV is very similar to commercial subscription television in concept, but it uses satellite channels, encryption codes and decoders that are not generally used by public broadcasters. The advance of digital television technology is, however, beginning to “blur the edges” of this division of resources.
BTV users

As the name suggests, business is the main user of BTV. Companies use BTV to communicate with their direct workforce, their dealers and distributors and their customers. BTV is very popular among organisations with very large workforces covering a wide geography, especially those who rely on concessionaires to retail their products.

Many “hi-tech” companies broadcast frequently to their own employees and, by selectively allowing third party broadcasters to carry their programmes, they also gain exposure to their customers and prospective customers.

Many companies in the financial sector have used BTV as a communications tool for several years and are now expanding the use for employee education. Many major motor manufacturers are also major users of BTV. Their programmes are aimed at their direct workforces but, more importantly, at the dealer networks through which their products are sold. BTV downlinks at every dealer outlet keep the dealers’ staff informed of all the latest product information and marketing initiatives.
Applications

The content of the programmes could be anything that needs to be communicated swiftly to a number of people in diverse locations. BTV is an invaluable tool for kicking-off new campaigns and launching new products. Changes in corporate strategy can be communicated accurately to the workforce and the ability to broadcast the message "live" allows the audience to ask questions through telephone, fax or email. The message owner is able to answer the questions either live, as part of the broadcast, or through the corporate intranet.

The success of special events, especially where multiple locations are involved, can be greatly enhanced by the use of BTV, a classic example would be a company merger or takeover. Bringing the different workforces together can greatly increase motivation at a time when confidence is likely to be low. For such events, it is not necessary for a permanent BTV infrastructure to be in place as any public or corporate location can be temporarily adapted for this purpose.

Advances in digital satellite technology are making BTV increasingly attractive as the vehicle for distance learning. By using personal computers, the Internet (or Intranet) can be used to provide the return path making BTV a very effective, two-way medium for Interactive Distance Learning (IDL). IDL technology allows a Subject Matter Expert, who would normally only be able to address a relatively small number of people, to interact with many hundreds of people simultaneously.

Subscription BTV channels dedicated to the delivery of generic business and IT related programmes, which are becoming increasingly common in the USA, are now emerging onto the European market. These programmes are aimed at two very different target populations, managers and IT professionals, and have very different aims. The management broadcasts are designed to gain the confidence of the viewer and show why he/she should do business with the vendor. The technical programmes are presented by highly skilled product experts and are designed to give the IT professional confidence in his/her ability to support the product.
Benefits

**Speed of delivery and the integrity and clarity of message** are the greatest benefits of BTV. For organisations trading in huge geographical areas with varying languages, time zones, cultures and business needs, the challenge of delivering education, or communicating, to large target populations, within constantly decreasing timeframes, is becoming ever more difficult to conquer.

BTV allows the delivery of information and/or education to the whole sales-force in a single broadcast putting many more feet instantly on the street, expanding the window of opportunity and increasing revenue. By selling more products quicker, the return on investment is realised earlier.

By communicating with the workforce in their place of work, productivity and motivation is increased. By communicating, in person, to the whole target audience, the owners of the messages can be confident in the knowledge that the content and integrity of their communication is retained. One of the great strengths of BTV is that it allows information to be communicated accurately to the target audience of the user’s choice.

The services of Subject Matter Experts are becoming increasingly difficult to obtain and they are able to command ever-increasing fees. External expert knowledge that, for reason of availability and/or cost, would have been out of reach of the majority can be made available to large numbers of people. Maximum exposure may be given to the internal expert knowledge with minimal impact on the resource.

Any room in which the occupants can view a conventional television can be used to receive BTV programmes. This ability to deliver education and information at the point of need maximises the use of existing space and reduces the requirement for formal training centres and dedicated viewing areas. As the signal is a conventional TV signal, it can be recorded locally so that those who were unable to participate on the day may view the programme later.

Travel and accommodation represent significant costs to business. The non-productive time lost as a result of travel adds to the cost. Because BTV can deliver education and communication directly to the point of need, a significant proportion of this cost can be eliminated.

Experience has shown that training delivered using BTV, and especially IDL, can significantly reduce the duration of training events by reducing wasted time. Television programmes run to a strict timetable and participants soon learn that they must arrive back promptly from breaks and be prepared to start on time.

The following charts compare the times taken to deliver education to a target audience of 375 people using conventional delivery methods, centralised event, cascade and road show, and compare these to interactive training delivered using BTV. Other charts show the increased selling opportunity provided by the delivery of sales training using BTV. The data is based on actual case studies conducted in the USA and Europe and experience of training delivery by conventional methods. The extra revenue values are assume that sales for each salesperson would increase by £200 per day for each additional day for which they have the new product in their portfolios.

Although the examples used are for training delivery, they could apply equally to the delivery of any message. If the size of the target audience increases, the delivery time and costs, using conventional methods, increase exponentially. Adding additional resources can reduce delivery time but this increases costs even further. **With BTV, however, once the infrastructure is in place, the size of the audience can be infinitely increased with no impact on delivery cost.**
### Training Delivery Methods

**Comparison of Elapsed Delivery Times**

- **BTV**
- **Centralised**
- **Cascaded**
- **Roadshow**

![Graph](image)

### Training Delivery Methods

**Comparison of Costs**

<table>
<thead>
<tr>
<th>Delivery Method</th>
<th>Cost in $K</th>
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</thead>
<tbody>
<tr>
<td>IDL</td>
<td>22.55</td>
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<tr>
<td>Cascaded</td>
<td>28.95</td>
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<tr>
<td>Roadshow</td>
<td>47.5</td>
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<tr>
<td>Centralised</td>
<td>141.75</td>
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![Cost Graph](image)

### Training Delivery Methods

**Extra Revenue Opportunity Provided by IDL**

<table>
<thead>
<tr>
<th>Delivery Method</th>
<th>Revenue opportunity in $K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadshow</td>
<td>754.29</td>
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<tr>
<td>Cascaded</td>
<td>1594.29</td>
</tr>
<tr>
<td>Centralised</td>
<td>3401.14</td>
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</tbody>
</table>

![Revenue Graph](image)
BTV vs Roadshow Training
Increased Opportunity

- 1,320 person/days increased selling opportunity

BTV vs Centralised Training
Increased Opportunity

- 5,952 person/days increased selling opportunity

BTV vs Cascaded Training
Increased Opportunity

- 2,790 person/days increased selling opportunity
Costs

The cost of BTV falls into three main areas: programme production, programme delivery and programme reception.

Creating high quality television is expensive and programme production is, therefore, the major cost component of BTV. Programmes are usually a mixture of live and pre-recorded segments seamlessly mixed together. Producing programmes requires a combination of many highly skilled crafts performed by highly paid professionals, and producing an hour of broadcast quality television takes several man-days of work. Because all of the programme production work must be completed before the programme is transmitted, cost are very visible and BTV is often perceived to be expensive. However, because the costs are visible and “up-front”, budgeting is very easy and, provided that no last-minute alterations are made to the programme, there are no shocks or surprises when the invoice arrives.

Programme delivery is the simplest component of BTV costs. It is merely the cost of getting the television signal from the broadcast location to the satellite, in the required format at the right time, plus the cost of the satellite channel. This is a fixed cost, irrespective of the number of receiving sites and, dependent on the satellite used, will probably be around £750 per hour. Satellites are selected because of the geographical “footprint” in which the signal can be received. When it is necessary to broadcast to a target audience outside of the usual satellite footprint, the signal can be received by an “earth-station” within the footprint and re-broadcast to another satellite with an appropriate footprint. In this case, there would be a similar additional fixed cost. Future developments in satellite-to-satellite communication will make it possible to broadcast from anywhere to anywhere.

Once broadcast to the satellite, the signal can be received, by anybody equipped with a suitable decoder, anywhere within the footprint. Having installed the downlink, there is no cost associated with programme reception, other than the cost of maintaining the equipment. The cost of purchasing, installing and maintaining the equipment necessary to receive signal varies from country to country, but is constantly falling as the technology improves.

When examining the costs of BTV, they must be compared to the cost of delivery by conventional methods. When the reduced time-to-market and increased revenue generating opportunities are included in the analysis, BTV is an extremely cost-effective method of delivering corporate messages.

The costs of delivering a BTV programme remain static, irrespective of the audience size; the larger the audience, the smaller the unit cost of delivery. BTV is the only face-to-face delivery method for which this is true.
Interactive BTV

It is the ability of the presenter to interact with his audience in real-time that differentiates live television from videotaped programmes. The ability of the audience to put the presenter “on the spot” adds credibility that can never be obtained from a recording. Compare the politician delivering a “piece to camera” on “News at Ten” to the live interview with a respected political commentator.

The interaction can take many forms. It could be live studio audience, possibly supplemented by telephoned, faxed or e-mailed questions from the remote locations. It could simply be telephoned or faxed questions from the remote locations.

Another alternative is the use of “Viewer Response Keypads”. These devices allow the presenter pose multiple-choice questions to members of his audience who reply by pressing the appropriate key on the responder. A controller at the site communicates the responses to a host computer at the broadcast location. Sophisticated software in the host computer can analyse the data and present it back to the audience and/or produce reports for later investigation. As responses to multiple choice questions can be totally anonymous, this is a very powerful tool for obtaining honest opinions from a very large target audience.

Imagine an instant, company-wide employee satisfaction survey!

Some viewer response systems also incorporate a microphone that allows verbal communication between the presenter and a member of the remote audience. The whole audience can listen to this conversation and the presenter can also call on the services of Subject Matter Experts in other locations. Systems such as this are essential for Interactive Distance Learning and have been used very successfully for this purpose throughout the world.

Until recently, viewer response systems use normal “dial-up” telephone lines for the return audio. As this takes a much shorter path than the incoming satellite signal it is necessary to use sophisticated, expensive echo-cancellation hardware to prevent audio feedback, which would cause “howl-round”. This has, to date, been the only source of dissatisfaction to many IDL programme makers, broadcasters and students. The ability of the Internet to carry voice data has, however, provided a simple and inexpensive solution that has expanded the capabilities of the systems. New products appear to have solved the problem and have greatly extended and improved the options available. With the Inter/Intranet carrying the voice data, and the development of technology to “stream” video to the personal computer, live, interactive television will soon be possible at the desktop, and eventually in the home.

The method of interaction is not, however, the most important factor; it is the ability to interact which adds value and credibility to the broadcast. For many people, especially those for whom English is a second language, the extra time which fax or e-mail allows for them to compose their question can be very useful.
Future

The moving image, either broadcast or videotaped, is the most powerful communication tool available to business. The advent of digital television, and its convergence with Personal Computer technology, and to some degree telephone technology, means that high quality video images can now be captured, edited and stored on computer disks. This data can be converted into various formats, both digital and analogue, making it easy to distribute it around the world on magnetic media or electronically on computer networks. However, even when compressed, digital video files are enormous and, if sent on computer networks, serious performance degradation can be expected. The DVD ROM is currently capable of storing, and playing, high quality, full-length movies using MPEG II compression techniques. New drives, soon to be available, will be able to hold over seven gigabytes of data (more than ten times the capacity of a CD ROM) and DVD drives using re-writable media will eventually replace the VCR and videotape as the medium for recording and storing video data.

The Internet is rapidly becoming the preferred tool used by business to communicate with its prospective customers; the Intranet is also becoming a powerful mechanism for employee communications. If Inter/Intranet users could view high quality moving video the results could be spectacular. However, because of the enormous quantity of data that must be received, it is necessary to reduce both the quality and size of the image to the extent that the impact is lost.

The future of television is digital, whether delivered by terrestrial transmitters, cable or satellite and the technology employed means that the convergence of the television receiver and the Personal Computer is drawing ever closer. Satellite channels which, until recently, were dedicated to digital video signals can now carry digital data streams enabling data returned from an Internet Service Provider to be transmitted by satellite. The increased bandwidth available, about forty times greater than an ISDN line, means that it is possible, with suitable PC hardware, to receive high quality, full screen television pictures in real time.

New systems, now becoming available, will allow high-quality, digital video to be “streamed”, through the server, directly to any PC with a PC/TV card installed. Any multimedia PC can be upgraded to this standard for about £70. Enhancements to this technology will soon allow Interactive Distance Learning (IDL) programmes to be broadcast directly to the desktop.

The capabilities of the Internet are continually expanding and the only serious restriction is the constant pressure on network bandwidths and the capacity of telephone connections, even ISDN. The ability to harness the huge bandwidths and speed of satellite communications removes these restrictions and opens up endless possibilities for the future.

In order to keep the size and cost of a satellite dish as low as possible, it is necessary to broadcast the signal from very powerful “earth-stations”. The equipment required to “uplink” to a satellite is very complex and expensive; earth stations are, therefore not abundant. Communications satellites soon to be launched will be equipped with the next generation of transponders. Tests have shown that it is possible to uplink to these satellites using very simple encoder/transmitters that could cost as little as $1,000. With the cost of dishes and decoders also falling rapidly, it could soon be possible to have a very high speed, two-way satellite link for less than the cost of a current receive-only link. This technology, coupled with the proliferation of digital television channels, the expansion of the cable networks and the convergence of television with the PC, bring closer the possibility of IDL in the home.
Conclusions

Advances in satellite and digital technology are making television a very attractive communications medium to many organisations. Many companies who already use satellite television for communications are now beginning to explore the use of the medium for distance learning.

We in BTV Solutions have practical experience of setting up and using BTV networks for education and communication. Our experience has given us the ability to recommend the correct delivery platform, hardware and software for your communications applications, and you can be confident in the reliability of the system. We are very well placed to help you obtain the maximum benefit from these new opportunities.

**Speed is the driving force of your business strategy.** BTV uses this force to expand the window of opportunity for new products entering the market place.

BTV is the perfect vehicle to increase the speed of communication, motivate the workforce and help achieve the growth that is essential to the continuing success of your organisation.