

Annex 1

Online articles related to second screen applications and connected TVs

Gory Games Play-along App-Surpass CBBC Expectations with 15% Viewer Conversion

21/07/2014

London, United Kingdom, July 21, 2014 - SyncScreen , innovators in the creation and delivery of harmonised two-screen TV experiences and Civolution, the leading provider of technology and solutions for identifying, managing and monetizing content, today announced that the Gory Games Play-Along app developed by SyncScreen and powered by Civolution's Automatic Content Recognition (ACR) technology, SyncNow, has surpassed CBBC expectations.

Speaking at the recent Children's Media Conference, BBC's head of Children's Joe Godwin was reported as saying: We were thinking possibly 6% of the audience if they were playing along at home, that would be a good measure of success. But with Gory Games it was 15% per episode playing along, and for Ludus (Boom Pictures/Cube) it was between 10% and 15%.

The BBC has also revealed that the Gory Games app, developed as a play-along app for the popular Horrible Histories series, has already been downloaded over 100,000 times.

Both the CBBC play-along apps, Gory Games and Ludus utilize the SyncScreen Framework and integrates Civolution's audio watermarking based ACR technology. The play-along app for iOS and Android tablets and smartphones lets children take on the studio contestants, test their knowledge of gruesome facts and win virtual prizes whilst watching the show live, or on-demand on BBC iPlayer.

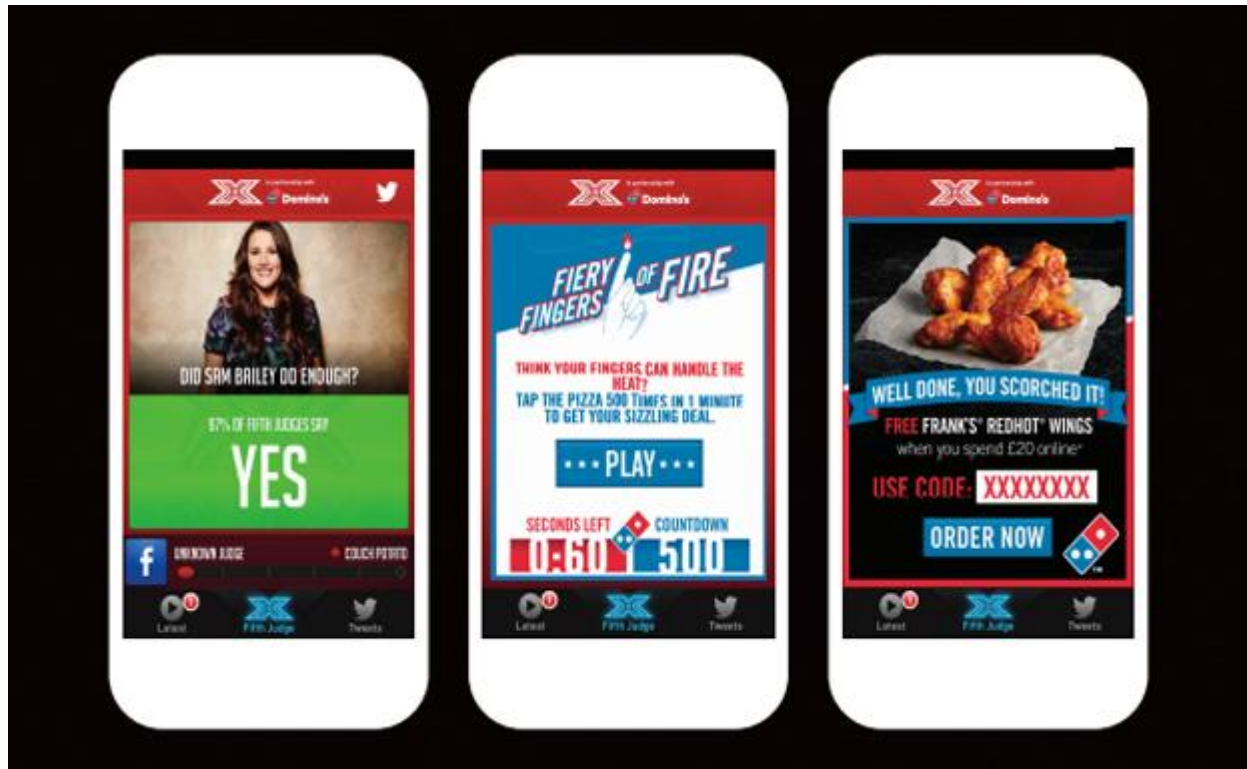
With around 15% of audiences interacting with Gory Games, which is far in excess of BBC's expectations, it's clear that this bold decision to design a play-along app has really paid off, said Andy Nobbs, CMO, Civolution. We are very proud to work with SyncScreen on this innovative - and very successful project.

Marc Goodchild, Creative Director of SyncScreen explained the production workflow for the integrated 2-screen play-along apps: The whole point about a creating a well-designed and executed 2-screen experience for children is to help children fall back in love with the TV, not distract them from it. The biggest challenges we face in designing for simultaneous 2-screen usage is the battle for the attention of users added to then seamlessly teaching them how to take part in the game, to play-along without distracting from the show. This involves a major change in how shows are produced, such as the need to design in extra audio cues from the show host to allow time for the play-along element and the need for constant signposting to users to explain what is about to happen next, to keep them involved. We are sensing that this well-executed 2-screen approach on Gory Games may be leading the way in driving repeat viewing of the TV show, which starts to prove the case for 2-screen investment.

<http://www.4rfv.com/6IGM1AGMBD1X/gory-games-playalong-appsurpass-cbbc-expectations-with-15-viewer-conversion.htm>

ITV: We have only just begun to realize second screen ad potential

JULY 10, 2014



- The success of the second screen ad formats being used by ITV has led the UK's largest commercial broadcaster to conclude that synchronized second screen is worthy of being described as a new advertising paradigm. That is certainly the view of Jon Block, Controller of Commercial Digital Products at the company. He told Connected TV Summit recently: "The best part is that we have only just begun to realize its potential."
- Advertisers on ITV second screen apps, covering smartphones and tablets, are achieving click-through rates that dwarf what is typical with mobile display advertising, reinforcing television industry hopes that broadcasters can take a greater share of 'digital' marketing spend. This interaction is underpinned by the willingness of the second screen app users to 'get stuck in' and enjoy the apps.
- The technology that underpins much of the excitement is ITV's Ad Sync, which allows advertisers to take over the tablet or smartphone screen during the broadcast commercial break. Brands can use this interactive real-estate to push extra advertising content.

- Using Ad Sync in the second screen app for the (autumn) 2013 series of The X Factor, Specsavers (opticians) achieved a 29% click-through rate by giving users the chance to find out more about characters in their TV ad, which is nearly 60 times the typical mobile display ad click-through rate. Strepsils (sore throat remedies) used the Ad Sync format during the same series of The X Factor to offer a mini-game, hosted via a browser. The click-through rate for that was nearly 38%.
- During the same series of The X Factor, Domino's (take-away pizza) offered its 'Fiery Fingers of Fire' game where you had to tap your touch screen 500 times in a minute to access a "sizzling deal". Over 64% of people inside the app played the game and the click-through rate was 15%.
- Asda (supermarket) used Ad Sync to take over the second screen app so users could create their own snowman and share it with friends. The interactive ad launched to over 102,000 app users and 54% of them started to engage with the game, with 36,000 going on to create a personalized snowman during the three-minute take over. 14% of these snowmen were shared on social media. The click-through rate was 20%.
- More recently, the Britain's Got Talent (BGT) play-along app hosted synchronized second screen advertising with notable effects. For the final of the variety act talent show, Virgin Media ran a broadcast advertisement on television while an app take-over offered you the chance to play a car racing game. The engagement rate for this Ad Sync game was 76%.
- Everyone who was in the BGT play-along game during the broadcast ad break saw the second screen ad load, and that counted as an impression. The 76% engagement figure means that for every 100 impressions, the race game was started 76 times. The replay rate (people finishing the race and pressing replay) was over 45%.
- Block finds the figures impressive. "They are incredible. It is amazing, the engagement levels these games drive."
- Virgin Media was the only game-based Ad Sync that ITV ran during Britain's Got Talent and so far only a few clients have used the format, but it is early days. Two games models have been used: games run within the Ad Sync unit itself (Domino's with two different games, Asda and Virgin Media) and one where Ad Sync drove people to an in-app browser hosted by the advertiser (Strepsils).
- Turning his attention to second screen usage more generally, Block noted the power of the on-air call to action, which broadcasters and show producers can deliver. "We can have Ant & Dec [celebrated presenter double-act that front various hit ITV shows] or Dermot O'Leary (The X Factor host) driving people to the app," he noted.
- ITV is now actively looking to launch new shows that have second screen features 'built in' and Block pointed to the Israeli show format, 'Rising

Star', which ITV is launching in the UK, as an example. This is a singing talent contest with a live audience, judges and voting, except the home audience votes via the second screen app and their votes, far more than the judges (who have only a 30% voting share) decide the outcome, with their verdict being delivered in real-time and viewer photos appearing on a large screen as they vote 'yes'. Once the singer has won over enough voters the screen lifts to reveal the singer to the live audience.

- This show will be co-produced by ITV Studios and Keshet International UK and ITV is asking for contestants to apply before October this year. The show has been a major success in Israel with nearly 50% audience share. "This show has second screen built into its core," Block noted. He added that shows with second screen features that are integrated to this extent (the show relies on second screen interaction, rather than uses it to complement your viewing pleasure) will be the exception. "But this is an exceptional exception."

- Block gave a list of the lessons that ITV has learned over four years of experience with second screen apps. They have learned that the audience needs are: Sharing (e.g. share your thoughts about a show; Control and discovery; Fulfilling curiosity (e.g. more information about actors); Complementary engagement (e.g. play-along games); Rewards (competitions, rewards for loyalty); Contributing (what you say appears on the first screen); and Getting closer to the content (e.g. behind-the-scenes footage).

- "For entertainment shows it is mainly about sharing, enhancing the experience through gamification, and feeling that you are contributing to the show so that you are part of something that is bigger than yourself," Block explained. "In drama there is a second screen world before and after the show that is more about curiosity."

- Successful second screen app projects need calls to action ("As long as you can get into the broadcast airtime, that favours broadcasters and producers", Block declared) and minimal barriers to entry (Tweeting is a low barrier and downloading an app is a higher barrier). Viewers must also be aware of what the rewards are if they use the app.

- Block said game-based advertising (or "play-along advertising") is successful for a number of reasons, starting with the fact that it is interactive and immersive (advertisers take over the whole tablet or smartphone) and therefore high impact. "And all our research shows that this is non-intrusive and that is because we only allow advertisers to take over the ad break and the audience understands that trade-off [of content in return for ads] on the second screen as well.

- "It is mass-participation, and we have only scratched the surface on that," he explained. "Finally, there is a lower barrier to entry; it is a small

segment of the audience on that second screen and for them it is push advertising and they do not have to click a button. You cannot say none of this has happened before but what is different is the way we are bringing these things together under one roof; it is totally integrated."

<http://www.v-net.tv/itv-we-have-only-just-begun-to-realize-second-screen-ad-potential>

How lucrative are second screen companion apps for TV broadcasters?

Wednesday 5 June 2013

As Channel 4 announce the upcoming launch of the '4Now' second screen companion app for iOS, Kate Bulkley examines the commercial models underpinning the move by broadcasters to recapture a distracted TV audience through apps



With the use of devices in conjunction with TV viewing on the rise, Channel 4's 4Now app is the latest in a series of apps designed to capture the attention of TV viewers on the second screen. Photograph: Blend Images/Hill Street Studios/Getty Images

[Kate Bulkley](#)

In a move that beats ITV to the punch, Channel 4 will [launch a dedicated iOS app](#) that will work across the vast majority of its live TV programming and be integrated with Twitter.

The move is the latest by TV broadcasters to capitalise on the growing use of tablets, other "second screens" and social media.

Called 4Now, the new app will launch in July initially only on iPhone and iPad Apple devices to those viewers who have registered with Channel 4 via its on-demand service 4oD – a database that now counts nearly 8 million and includes one in three of the UK's 16 to 24 years olds. "We see this as another way of giving registered users something else," says Keith Underwood, director of strategy and technology at [Channel 4](#).

The idea is to have an "always-on, centralised destination" for second screen experiences with C4 programmes. This will hopefully be easier for audiences because different apps will not have to be downloaded one by one for each TV programme. The app will aggregate show information, allow real-time quizzes and voting and allow Twitter conversations around particular shows.

There are also potentially lucrative commercial pay-backs as well because advertisers and sponsors can be more seamlessly integrated between on-screen and on-app content across all

of C4's output and they will pay "significantly more" for an integrated sales opportunity that is possible using second screen technology.

C4 is beginning to talk to advertisers this week about some of the opportunities available. For example, sponsors of TV programme will be able to sponsor the show page for that programme on the new app. There can be links to an advertiser's micro-site as well as the capability to do real-time, synchronised ads that are triggered on the second screen through audio recognition technology, much like ITV is doing with audio recognition ad technology app Shazam.

"The issue we have always found is that although we have developed a load of good stand-alone show apps, the issue is when that show ends, you lose that audience and in junction breaks between programmes you can't do anything now, so with this one aggregated app you can really create some interesting experiences," says Underwood. He adds that the launch of 4Now doesn't "preclude" C4 from working with other third-party second screen apps like Zeebox, which is part-owned by pay TV broadcaster BSkyB, but clearly having their own app gives the broadcaster more control.

C4's app for the Million Pound Drop game show has been the poster child for second screen apps, with some 2 million downloads to date and a live audience usage rate of 12%. But the broadcaster believes that having one aggregated app across its entire prime time schedule will significantly enhance second screen use both for viewers and for advertisers.

To date ITV has launched only programme-specific apps for big live shows like Britain's Got Talent and XFactor and for its catch-up service ITV Player, but the biggest UK broadcaster is "developing and looking at all options" including an aggregated app approach like C4 is launching, according to an industry source.

ITV uses an ad synchronisation technology for BGT and XFactor where the mobile app for the programme includes adverts that are synced to the TV ad in real time and it released some positive statistics on second-screen advertising in late February, showing that offering so-called dual-screen (TV and a second screen) results in much stronger intent to purchase actions by viewers around products and services. Viewer engagement rates were 38% and click-through rates were nearly 9% during The X Factor finals last year.

This season's Britain's Got Talent app has already in the semi-final stages, reached 1 million downloads, versus 870,000 downloads for last year's entire series. As well as "buzzing" each act using a virtual red buzzer, users can give a 'YES/NO' to each performance and take part in live polls. In each case, they can see what the nation (and their Facebook friends) is thinking in real time. Some 170,000 users logged into the second screen app during last Tuesday's semi final, which is the highest number of users to date on a single show. ITV has found that the social media portion of the BGT app is key: users can follow their Twitter feed and tweet themselves without leaving the app.

A number of surveys point to rising usage of second screen devices while watching TV. According to audience measurement firm Nielsen in the US nearly 85% of tablet/smartphone users are on their devices at the same time that they are watching TV. [A number of UK studies](#) show that Britons are also multitasking at about the same level but only between 37% and 52% are using those other devices to look for something related to a show they are watching on TV.

Sky's move into second screen has two different parts, one is through bespoke iPad apps dedicated to Sky brands like for Sky News or Sky Sports. The Sky Sports app serves as an umbrella for a range of experiences, for example, around specific sporting events like the golf's Ryder Cup, F1 racing and Champions League football. The other second screen development has been through the Sky+ app that allows subscribers to direct their set top box to remote record programmes and when connected to the TV set top box (today about 2.3mn of Sky's more than 10.7mn subscribers) allows both users to browse what's stored on the Sky+ planner, or use the app as a remote control to change channels, or to access catch-up viewing. With the investment in Zeebox in early 2012, Sky began to add more social, informational and discovery tools to Sky+ as well for individual programmes across both Sky and non-Sky channels.

"The remote control function on the Sky+ app is relatively new and the Zeebox functions are even newer so it will take a while for this to become a mass market experience for everyone," says Gareth Capon, product development director at BSkyB. "Already there are core segments who are genuinely engaged and those numbers are growing and that's positive."

For Sky's coverage of the Champions League, it launched a new capability allowing viewers to access to 20 different camera angles and also to access different games, with 33% of the total monthly audience for the app coming back on a daily basis. The app also allows viewers to access all the coverage retrospectively in order to have their own debates around goals or other controversial bits of the games, which is a way of extending the viewer's engagement with the game and with Sky. "It's a very good example of a proper companion viewing experience because you can go back and watch the four or five different camera angles of an incident and for sports fans that is a really valuable experience that you can't get on the live broadcast," says Capon. Sky is looking to apply this 360 app technology to other sports as well.

For Sky, the core goal is to enhance people's viewing experience on Sky, which in turn will hopefully make them renew their pay TV subscriptions. The pay broadcaster is also looking at other monetisation opportunities against the Zeebox capabilities but Capon believes that beyond enhanced advertising integrations that any direct sales or links to commerce have to be win-win for both the user/viewer and for Sky.

"I always say that one of the simplest things we have done with Zeebox integrations is buy what you hear on screen, so music downloads. Now that is an explicitly commercial experience but it feels great for the users as well. So if you can build those type of win-win experiences then I think it works and that is what we are looking to do."

* Editor's note: This article was amended after publication - the percentage of people returning to the Sky Sports Champions League app is 33% rather than 35% and the in previous version ITV programmes *Scott & Bailey* and *Plebs* were incorrectly mentioned as having had second screen paid app trials. In fact these shows have only had online premieres as part of a trial on the paid portion of ITV Player which is only available on PCs.

<http://www.theguardian.com/media-network/media-network-blog/2013/jun/05/second-screen-companion-apps-tv-broadcasters>

'Antiques Roadshow' game launches Android, iOS app

By [Andrew Laughlin](#)

Friday, Jan 4 2013, 15:20 GMT

Antiques Roadshow, the BBC's long-running factual entertainment show, has launched a companion mobile and tablet app for its popular play-along Red Button game.

Available now on a range of Android and Apple iOS devices, the app allows users to play the [multiple choice valuation game](#) while the show is being aired live or on-demand.



© BBC

The BBC said that players can use the app to compete against other viewers in the same room and compare rankings from "novice" to "expert" level.

They can also access exclusive additional information on items featured on the programme via a specially-designed interface. This marks the BBC's first ever live, synchronous smartphone app.

Victoria Jaye, the BBC's head of IPTV and TV Online, said: "We wanted our first live and synchronous companion experience to appeal to a mainstream audience and create a real event in the living room for families across the UK - the *Antiques Roadshow* mobile app does just that.

"It builds on our successful Red Button play-along quizzes which regularly attract millions of viewers a week."

Antiques Roadshow presenter Fiona Bruce added: "The new app is great fun, I love guessing the values of objects, I only wish I got it right more often! Now that you can play on

smartphones and tablets, the world of antiques is certainly not stuck in the past."

Last month, the BBC said that the *Antiques Roadshow* play-along game has proved a big success with viewers since it launched as the corporation's first play-along TV Red Button game in September 2011.

After just nine weeks, the game - also involving viewers guessing the valuation of antiques and items on the show - was played by more than 1.5 million unique users. It proved "especially popular with older viewers", as over-55s accounted for 62% of users, despite making up just less than half of the overall viewing audience.

The companion mobile app uses inaudible signals embedded in the soundtrack of the programme, which are picked up by the microphone of a smartphone or tablet.

These are then used to identify the episode and cue the sequence of correct questions and answers, meaning users can still play the game while watching the show via catch-up on BBC iPlayer or home recordings.

"It's the kind of technology that makes the whole experience really simple and feels like magic." Jaye added.

The new app is available to download now for Android from [Google Play](#) and for iOS from the [Apple App Store](#). The first app-enabled edition of *Antiques Roadshow* will be broadcast on January 6.

<http://www.digitalspy.co.uk/tech/news/a448626/antiques-roadshow-game-launches-android-ios-app.html#~oU4Axj16aHqbO9>



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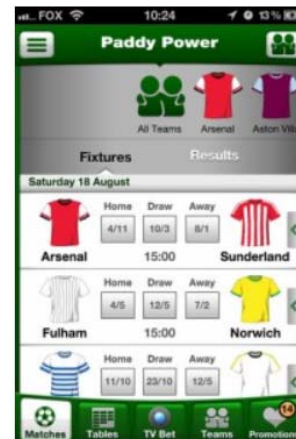
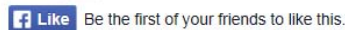
Paddy Power releases second screen app for Premier League football

September 19th, 2012

Bookmaker Paddy Power has released a second screen app for iOS to celebrate the launch of the new Premier League season, allowing users to get live odds by pointing their phone at the TV.

"All you need to do is point the camera of your iPhone at a TV and the app will recognise which match you're watching and display real-time odds," explained Paddy Power sportsbook mobile manager Sylvie McDermott. "Developed with our partners TVTak, it's smart and fast technology."

The free [Paddy Power Premier League app](#) also includes live scores and match statistics, real time match data, player profiles and news.



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<http://www.theappside.com/2012/09/19/paddy-power-releases-second-screen-app-for-premier-league-football/>

Made in Chelsea The Game



Put down your champagne, pick up your iPhone, iPad or Android phone and download the BRAND NEW version of the Made in Chelsea game now. It's YOUR turn to join the SW3 bois and girls as you make friends with the cast and experience London's most glamorous neighbourhood like never before.

Playing the game? Tweet us using #micgame



The Chelsea gang are back in town with a bang, for yet more exciting adventures! Enjoy a host of brand new story lines - as you once again play to become the ultimate socialite in the world of BAFTA-winning TV show Made in Chelsea. Party with even more of the cast as you rise up the social ladder - with Stevie (your new flatmate), Alex and Fran joining the ranks alongside the likes of Spencer, Proudlock and Binky.

Air-kiss, flirt, gossip and fight your way round London's prestigious SW6 - with twice as much content as the first Chelsea adventure. After running off to New York you're back in town and ready to make your mark once again!

Will you manage to hook-up with your favourite? Will you reach the heady heights of Chelsea royalty?



The game features over twenty of the show's famous west-London venues for you to explore, date and flirt in, and 3D versions of 15 of the show's cast for you to meet, gossip about and, if you're lucky, hook up with. Style your own 3D character with the help of Mark-Francis, explore the King's Road, make friends, make enemies, and collect juicy gossip, in your quest to air-kiss your way to Chelsea's elite.

Features

- Free To Play
- Get to meet, date, and hook up with the familiar faces from the hit show
- 3D likenesses of Spencer, Jamie, Alex, Francis, Binky, Lucy, Rosie, Andy, Stevie, Louise, Fran, Cheska, Proudlock, Mark-Francis, and Victoria
- Completely customise your look, and be judged by style guru Mark-Francis
- Tweet your friends pictures of your collection of outfits
- Collect and share juicy gossip about the cast
- Gather in-game followers to improve your social standing

- Unique voiceovers from your favourite characters
- Walk the King's Road, and progress through the London suburbs of Kensington, Belgravia and Mayfair
- Music from hot new bands Coast, Goodbye Chanel, Jaws, Kowalski, Labyrinth Ear, Red Kite, Paris Opera House, Hurricane Love

What's New?

- Triple the content - with a new, longer story to follow
- New characters - Stevie, Alex and Fran join the party
- New and updated gossip
- New outfits to choose from
- New music
- A renovated apartment
- Performance optimisations

<http://www.channel4.com/programmes/made-in-chelsea/articles/all/made-in-chelsea-the-game>

Glastonbury Festival - Coverage FAQs

What is available online?

- In addition to the TV and radio coverage, six stages – Pyramid, Other, John Peel, West Holts, Park and BBC Introducing will be streamed live across four screens via PC, mobile, tablet and connected TV.
- Personalising the festival experience, the audience will be able to tune in live or for catch-up whenever and wherever it suits them. BBC iPlayer Radio will be the place for all music on the go with a dedicated button in the mobile app for iOS and Android devices. People will be able to follow their favourite presenters on [BBC Playlister](#) and create their own Glastonbury playlist with their choice of the best tracks from the festival.
- A wealth of content will be available at bbc.co.uk/glastonbury offering an immersive live festival experience like no other, as well as more information about the line-up, acts and stages with photo galleries, interviews and exclusive performances. The BBC Glastonbury live blog will guide the audience to the BBC's best moments in Pilton, giving them access to behind-the-scenes moments that even ticket holders can't experience.
- BBC iPlayer will bring audiences performance highlights from over 90 artists for 30 days after the event, as well as all the action from BBC One, BBC Two, BBC Three and BBC Four.

Can I watch Glastonbury on the Red Button?

- On TV, additional Red Button streams will offer more content and highlights from the festival, and the BBC's Connected Red Button service available on Virgin Media's TiVo service and a range of recent Sony, Samsung, LG and Panasonic Smart TVs, which will bring viewers all the live streams and on-demand video seamlessly to their TV.

<http://www.bbc.co.uk/programmes/articles/4pxRZh6dm9Y256CKwW8yBqQ/glastonbury-festival-coverage-faqs>

Foxes Live: Wild in the City

UI/UX, Web Design, Web Development

PROJECT BY

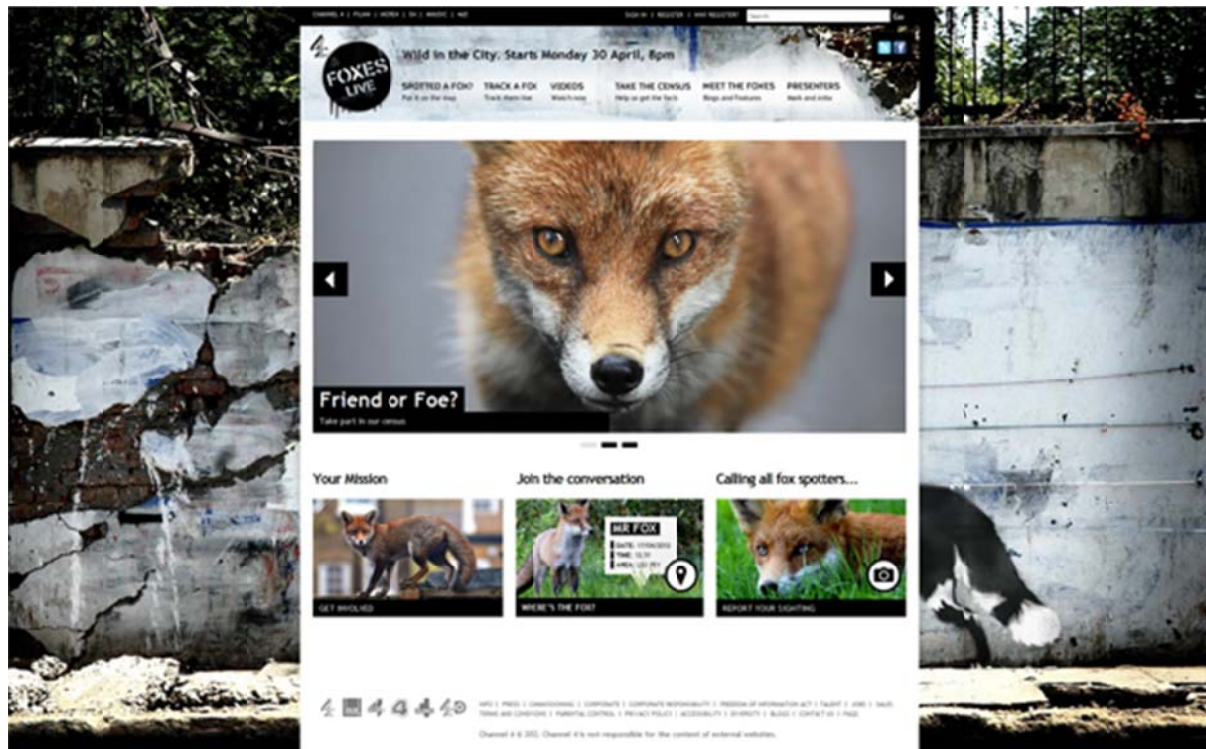


Numiko

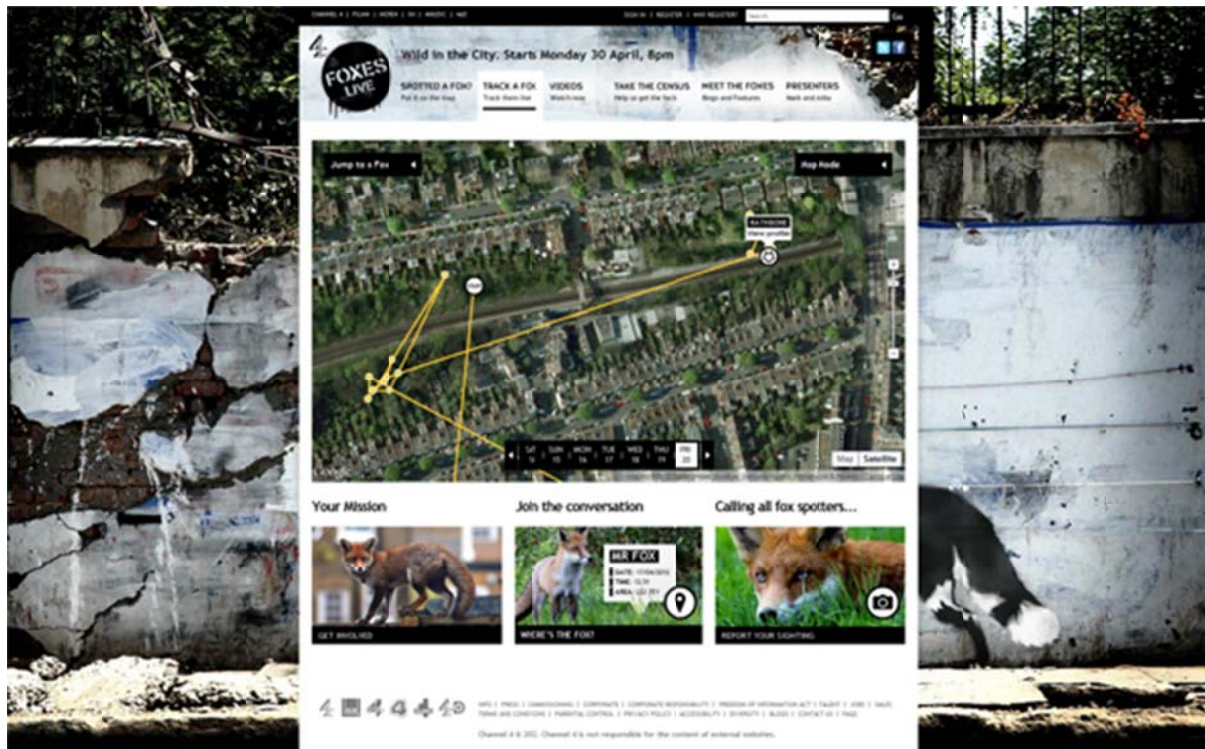
Leeds, United Kingdom

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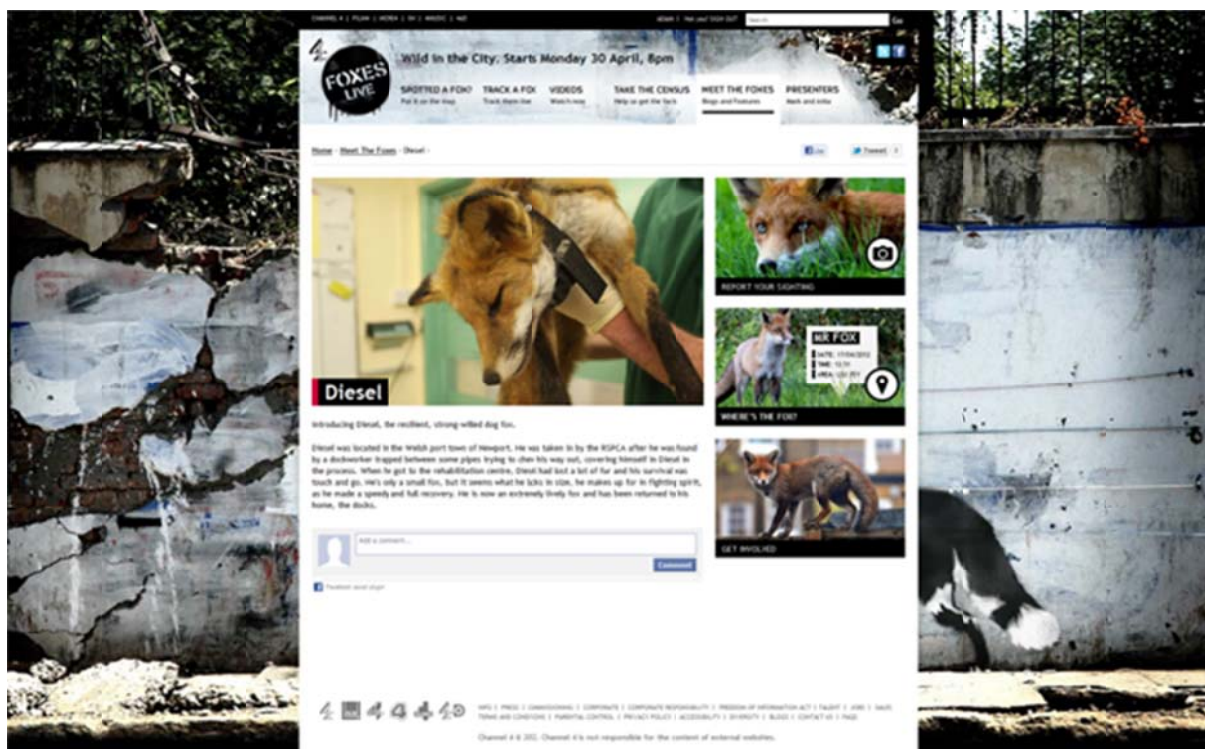
Foxes Live: Wild in the City was a truly multiplatform project for Channel 4 and Windfall Films. It aimed to uncover the secret life of the urban fox and also what we, the public really thought of them. Numiko were invited to bring it to life online and create the programme brand. The success of this project lay in the deep integration between what was happening on TV and what viewers could see online.



The really clever stuff was how we tracked nine urban foxes in real-time using GPS collars on a map. People could see how the foxes they'd just seen on TV spent their day. Where they went, how fast they moved and where they slept.



We created the biggest ever census of attitudes to urban foxes. Mangy nuisances or a pleasant addition to our cities and towns? With more than 18,000 responses, this formed a scientific study with Brighton University. We also mapped over 19,000 sightings across the UK, allowing users to upload their sightings through our site.

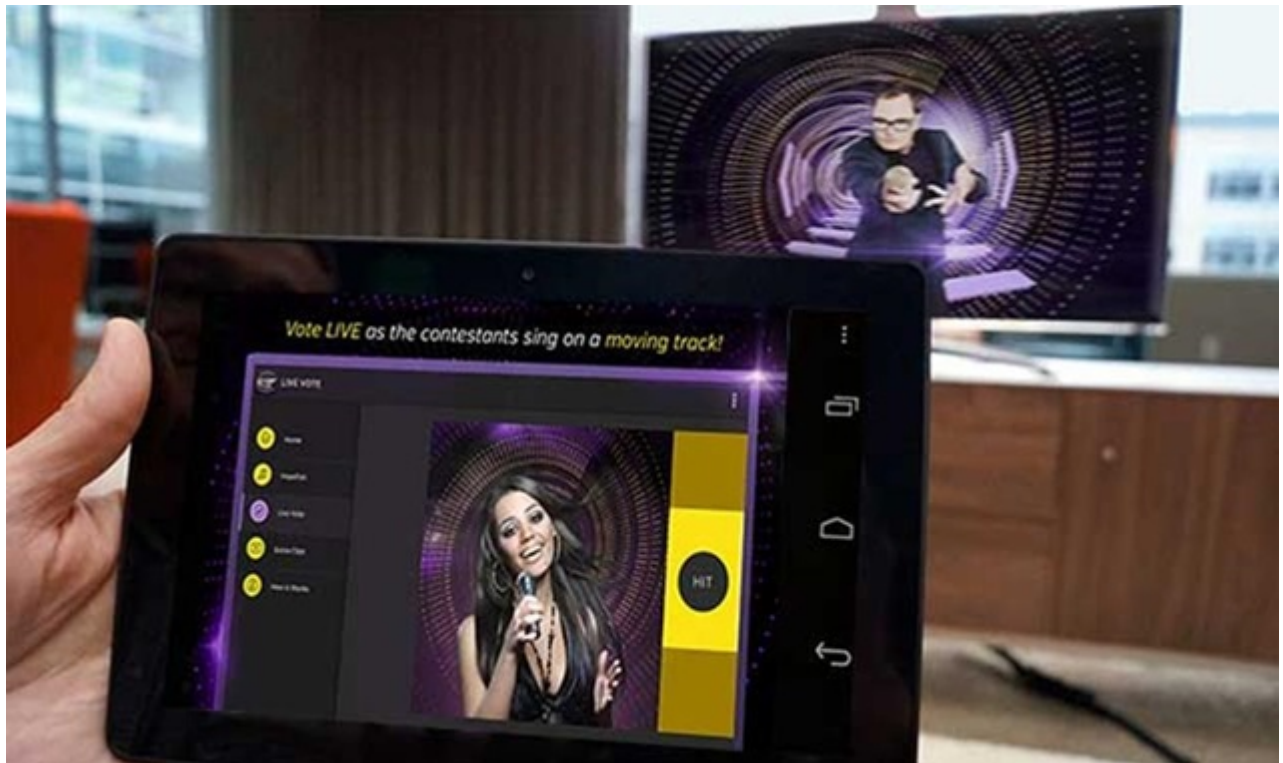


Without a doubt, this was one of Channel 4's most successful multiplatform projects and we were very proud to be involved.

<https://www.behance.net/gallery/6166873/Foxes-Live-Wild-in-the-City>

Broadcast Digital: playalong apps

5 September, 2014 | By [Will Strauss](#)



After seemingly falling through a trapdoor, the second-screen app is on the rise again.

Some four years after its launch, C4's *The Million Pound Drop* is still the poster child of second-screen interactive formats.

At its peak, with 12.5% of its audience opting to play along with host Davina McCall, and more than 2.7 million apps downloaded, it broke new ground. The *Financial Times* declared that it hinted at a "vision for a new kind of data-enriched programming".

Such was its impact that many predicted a cavalry charge of successful second-screen app-based formats. But that never materialised.

ITV's *Red Or Black?* had a second-screen app. *Who Wants To Be A Millionaire?* had one too. Endemol tried it again with *The Bank Job*. And they weren't the only ones. Some apps were better received than others, but none had quite the playalong impact of *Million Pound Drop*.

"There is an element of luck in it, let's be honest," says Tom McDonnell, chief executive of Monterosa, the company that worked with Remarkable Television on *Million Pound Drop* and provided the software platform, LViS, on which it sits. "There is a bit of chaos theory in this and although we thought *Million Pound Drop* was great, I do not think anybody predicted its success. There were a lot of things that made it good anyway and then the interaction made it better. It just happened to be the thing that was most innovative. The combination of those things made it a great show."

No magic solution

One possible conclusion for second screen stalling is that a TV format, especially an entertainment one, is not suddenly made irresistible just because it has a playalong element, in the same way that making a drama in 3D doesn't magically improve the story.

Wil Stephens supports this theory. Stephens is chief executive of Cube, which is part interactive television production company and part games studio. Working with Boom Pictures, it created Ludus, CBBC's first native playalong app for mobile and tablet devices, and one of a new wave of app-based formats that are capitalising on the perceived demand for second-screen experiences.

With an audience interaction rate in early 2014 of between 10% and 15%, it has had, in context, a similar success rate to Million Pound Drop.

Ludus worked, says Stephens, "because it was conceived as an interactive proposition from the ground up, so the gaming elements were absolutely core and central to the TV format. Million Pound Drop was a seminal moment in the industry which really changed things, but we are now seeing a natural evolution where we are going deeper."

It's probably become a cliché, but that early involvement in a project, while not mandatory, certainly helps.

Hit and miss

"I think it is possible to tag on playalong apps at the end, but the likelihood of success is lower," says BrianMcHarg, technical director at Chunk, the company behind the app for Initial and Remarkable's Alan Carr-fronted C4 entertainment format The Singer Takes It All.

"Audiences can be very digitally savvy and see that it has been tacked on. I think the best ideas are definitely integrated from the off."

While viewing figures for Singer haven't been huge, the second-screen element, which allows prospective contestants to upload their singing performances prior to transmission and then lets the public vote for their favourites, was well received.

During the opening show, 2.4 million votes were cast by more than 142,000 viewers – 14.3% of the viewing audience, a higher interaction figure than for Million Pound Drop.

According to McHarg, that success was down to adding value to the show but not making the interactive element essential to the viewing experience.

"Viewers can dip in and out throughout the show," he says. "You get a richer experience by using the app than you would without it. But you mustn't forget the other six days and 23 hours that the brand or show is out there but not on air. Retaining that audience throughout the week is also key."

While serendipity, adding extra value and being integrated from the start are all important for second-screen app formats, there is a fine balance between interaction and distraction. Get it right and your audience engages on new levels; get it wrong and they're off.

CBBC's Gory Games playalong quiz app seems to have got that balance about right. Developed by SyncScreen using its SyncScreen Framework (also used on Ludus) and Civolution's automatic content recognition technology SyncNow, the app allows children to take on the studio contestants, test their knowledge and win virtual prizes while watching the show live or ondemand via BBC iPlayer. It was downloaded more than 100,000 times and had a 15% conversion rate.

With the app 'listening' to the TV show and detecting events to interact with in real-time, it provided a fully synchronised experience. But it required the interactivity to be built into the production process.



Creating layers

"To play along without distracting from the show involves a major change in how programmes are produced," says SyncScreen creative director Marc Goodchild.

"That was the success of Gory Games. This is not about the technology but about getting upstream in the scripting process or in the edit suite to create extra layers. We re-edited bits of the show and added in extra audio cues from the host to allow time for the playalong element. They also allowed constant signposting to users about what would happen next, to keep them involved. It adds up to a single experience that can be consumed with or without a tablet in your hand. Once we'd got that nailed, building the app was much easier."

The distraction debate creates conflict. While many TV people 'get it', there are still some who feel that the main screen is sacrosanct. This could be one of the reasons that certain genres haven't been publicly exposed to second-screen formats.

"We have been involved with development projects and pitches that have had the crime drama whodunit mechanic at their heart," says McDonnell. "In one case, the writer of the drama blocked it because he did not want people turning their attention away from his show. Get real. Not everybody watching your drama is always sat there, in stony silence, completely immersed."

Stephens argues that there should be a distraction. "It's what makes the experience interactive," he says. "But the key is to control that distraction. Young kids on their couches

watching TV are distracted by the devices anyway, so why don't you control that distraction and make it part of the experience?"

The big question is where the viewers' attention should be at any one time, reckons Goodchild. "Don't make the devices fight. It is about light and shade, ebb and flow. We need to guide people backwards and forwards between screens but make it natural. To model it, we look at different elements picture-in-picture in the edit suite. If it works there, it will work as a secondscreen proposition.

While live entertainment series and gameshows, plus the occasional live sporting event, are the TV genres that have worked most successfully with playalong apps, there is no technical or cultural reason why others cannot.

Monterosa is currently working on a playalong app for Doctor Who on BBC America. It is not strictly synchronised with the show itself, but it unlocks a game at the precise moment that it goes to an ad break.

"Who Knows Who is a superfan quiz game and a sponsorship activation for AT&T," explains McDonnell. "It challenges the hardcore Doctor Who fans who have tuned in to the premiere of the new series to score as many points as they can in a number of rounds. That is an example of second-screen interaction for scripted TV." With the success of Ludus, Gory Games and The Singer Takes It All finally proving that Million Pound Drop was not a fluke, there is positivity again around second-screen apps. For it to continue though, broadcasters need to be brave, says McHarg.

"In the first episode of Singer there were issues in the studio on the first two votes, and everybody hammers that," he says. "It is a technical embarrassment. But to move things on, we need as an industry to support that risk and let people make those mistakes as long as they are not making them all the time."

"We're still in the very early days," adds Goodchild. "There needs to be more experimentation. You shouldn't judge the market on the first few examples of two-screen."

In-app voting: Enhancing on-air content



With the Keshet International-devised interactive music talent show format Rising Star due in 2015, ITV is hoping to follow up the success of in-app voting on The X Factor and Britain's Got Talent with something more holistic.

But, as Athena Witter, executive producer for entertainment at ITV Online, explains, that doesn't mean every single shiny floor show is destined for the dual-screen experience.

"The programme content is the key priority," she says. "Where we pursue second-screen opportunities, the aim is to enhance the on-air content and the experience for the viewer. It's important to us that when we are considering an app proposition alongside a programme, it allows for a genuine feedback loop, whether on screen or as mass participation within an app environment."

Witter acknowledges that in many scenarios the programme idea often precedes any interactive elements – contrary to what is deemed best practice by many second-screen app developers and format producers. But she says that is changing, where appropriate.

She says: "Usually, the programme idea will come first and second-screen activity may be commissioned if it lends itself to the TV format. However, we are also seeing new interactive shows where the app activity is integral to the format, such as Rising Star and The Singer Takes It All. As a commercial broadcaster, we must also consider how we enhance the viewers' experience in a commercially viable way and not simply because it's the 'new thing' to do."

For that 'commercial viability', ITV is able to utilise its second-screen advertising capabilities and glean some useful data.

"We successfully sync on-air ad spots with creative executions within the app via our AdSync product and are seeing strong click-through rates of approximately 14%," says Witter. "We also use a unique social insights tool called Whisper, which offers a new range of planning insights using social data generated from a second-screen audience."

Her advice to producers looking at second-screen options is simple: the app experience should be as smart as the linear format. "Instead of looking at a site or app being there to support the show, we view the activity as supporting the audience," she says.

www.broadcastnow.co.uk

Behind the scenes with Sky Sports: Why digital is changing football for good

When Sky Sports introduced the Red Button services to its football coverage, some considered the new feature a gimmick, others a side-show to the main event. But today, with the company's smartphone and tablet applications in full swing and unprecedented online access available, it could be argued that traditional linear broadcasts are becoming the side-show to the company's digital offering.

Sky has never been shy in its intent to innovate in all areas of what it does. Rival companies may come up with something new every now and then. Sky seemingly does so with alarming regularity.

All aspects of its broadcasting services have benefited from clever integration with technology, including the first [HD TV](#) set-top-box in the UK, pause, play and rewind television viewing, and the rapid expansion of its Sky Go service and apps. But it is Sky's long-running love affair with football that has seen the company constantly look for ways to improve its output.

The Red Button service was a mere forerunner to what is available now. Thanks to the rapid rise of the second-screen experience, die-hard football fans have access to more content live and otherwise than they could possibly have imagined previously, and all in their hands while they are watching a chosen live match on TV. It is revolutionising football and sports viewing generally and has certainly piqued Pocket-lint's interest.

That's why, when we were invited to visit Sky Sports in west London on a European Champions League night, to see how the digital offering was put together in tandem with the main broadcast, we couldn't refuse. And not simply because we got to meet Sky Sports News anchor Hayley McQueen.

We spent some time in the main studio, with Jeff Stelling, Jamie Redknapp, Graham Souness and guest for the night Gareth Barry chewing the cud. We toured the Sky Sports Digital Media department to see the teams in charge of the alternative match streams in action. And we stopped off at the Sky canteen to have a rather nice corned beef hash and chips.

But one extremely important area to visit was the production gallery for Sky Sports' big live match of the night, Manchester City versus [Bayern Munich](#), because it was there we found out that times they are a-changin'.

Admit that the waters around you have grown

In the main studio gallery there was the usual hustle and bustle you'd expect from a live production. A large team of editors, a producer, a director and other people whose jobs also probably ended in "or" were gathered around making telly. Importantly though, one of the digital media team had a seat in the arena too.

This is a fairly new idea, and is a definitive sign that the digital side of the proceedings is gaining in import, not only to the public watching and engaging with Sky's services, but also within the traditional production set-up.

In previous years, the digital output would be managed elsewhere in a building or even off site. In some cases and with some channels that's still true. However, with somebody from the digital team in the gallery itself, it means that they feel part of a larger production. And they can gain insight into the programming to include in their own content delivery.

Football content editor Stephen Mills, for example, was in the gallery that night and was tasked, among other things, to keep the live blog and Twitter feed up to date with news, statistics and comments from some of the studio talent. He kept a close eye on what presenter Stelling and the pundits were saying, and all from a seat in the room next door to them. That closeness makes a massive difference.

Mills wasn't the only person working on the feeds that night - others worked upstairs in the digital media offices - but he was the one with his finger on the pulse. He was included in the main production, so to speak, and the end result was better for the reader therefore.

It is this integration between the old style of broadcasting and the new that became the underlying theme for our visit throughout.

Pay no attention to that man behind the curtain

Although many might believe that the sum total of Sky's Champions League broadcasting consists of just one or two live matches on a night, with another match or two shown the following night, there is an entire floor of other staff members, production teams, commentators and pundits that deal with the streams of every other live match being played the same night.

The way the Champions League group round works is that, for the most part, all of the teams in four of the eight groups play each other on a Tuesday night, the other half play on the following Wednesday. That means there are eight games each Champions League night, and all will be covered by Sky in one way or another. This has been part of the Red Button service for some time, but recently also makes up the numerous viewing options available on the Sky Sports for [iPad app](#).

Apart from access to Twitter feeds, the constantly updated statistics on the Sky Sports web pages, news and commentary on a variety of other platforms, football fans who own [iPads](#) and have Sky TV and Sky Sports subscriptions can see any match of their choosing live on the Sky Sports for [iPad app](#). And they can flit between any of those broadcast.

What that means is that there still needs to be the same quality of presentation for each match, regardless of whether they are on the main Sky Sports channels or not. For the Sky Sports Digital Media team, that means production members having to watch all matches at once, some to update the on-screen scores, some to package the goals, and a host of additional commentators and football pundits locked in boxes scattered around the office.

Each of those matches might not have quite the resources of the main live shows, but you wouldn't know it by the quality of the end products.

It was on this level that we were given a guided tour by Tom Middleditch, the senior manager of video products, Sky Sports Digital Media. And it is he that explained that it is somebody's job to press a button when a goal is scored and why.

You'd better push the button and let me know

Automation for the score graphic that appears on screen during matches is inevitable, admitted Middleditch, but not for the foreseeable future. When we asked him whether computer software could replace the human interaction required to simply update a score, his answer was actually quite obvious. How could a computer know whether a goal was subsequently disallowed or not? What if the ball had crossed the line, but there was a foul in the build-up? And what would production runners do in an evening if they can't sit waiting on tender hooks for a goal to occur?

In fact, when Middleditch was lower down in the pecking order, pushing the button was one of the better jobs on the rota. You get paid for watching football, he told us. What's better than that?

The senior manager of the department also sat with us to take us through the latest iteration of the Sky Sports for [iPad app](#), and the Champions League event centre in particular. We were impressed: not only can you watch any of the matches live, explore the live statistics down to the most minute detail, but you can also direct the action yourself. Sort of.

In a feature called Sky Sports 360, replays of goals and other key moments become available throughout the match - another task for the digital media team - and not only can you stream the event on demand, you can also choose which camera view you would like to see it replayed through, even switch between them during the playback. More camera viewpoints become available as time wears on, so by the end of a game you might have access to all available cameras, chopping and changing between them as you see fit.

While we were with Middleditch, Manchester City's Joe Hart made a couple of the most famous of his recent goalkeeping blunders, letting Franck Ribery's goal whizz under his arm when he should really have saved it and then palming Arjen Robben's weak shot into his own net. These became great examples to illustrate the app's talents. Not so much for a Man City fan, but we watched them from pretty much every conceivable angle.

They think it's all over

And, more than anything else, this gave us the strongest indication of where Sky wants to take its sports coverage in the future, not just football. Rather than watch two or more matches at once, or read Twitter feeds of experts' or peers' thoughts on the action, or watch intently as a score flips over knowing that it is keeping someone in work, Sky Sports is offering engagement that football fans have never really had before.

The Champions League night was a great example because, as Middleditch explained, Sky has more access to multiple feeds and streams from the tournament than it does from the Premier League for domestic games, but the potential is there to expand to other areas of the broadcaster's output. [Formula One](#) has already got multi-camera feeds on race days, and other sports such as golf and cricket have had their interactive events too, but we fully expect Sky to further entwine its digital strategy in everything it does.

It is no longer an additional feature to the main show. It is very much a part of the main show. Red button and all.

You can download the [Sky Sports for iPad app from iTunes](#). It is free to download, but you will need to be a Sky Sports subscriber through Sky to gain access to the live features.

<http://www.pocket-lint.com/news/124885-behind-the-scenes-with-sky-sports-why-digital-is-changing-football-for-good>

How to connect Android to TV: see your phone or tablet apps on the big screen

We explain how to watch video and photos wirelessly or with a cable

By Dave Stevenson | PC Advisor | 31 July 14



Tablets are perfect for individual users – lightweight with very long battery life, and with bright, sharp screens that make light work of everything from watching films to reviewing photos. Bigger crowds call for bigger screens, though: here's how to connect your [tablet](#) to your [TV](#) without spending a fortune or drowning in a sea of cables.

Tablet owners live in a golden age of content: streaming video applications such as [Netflix](#), [Amazon Prime Instant Video](#) and Blinkbox, catch-up services including iPlayer and Channel 4's 4oD, and home-spun video and photographs are all begging to be shared. And, while sharing online is the ultimate convenience, sharing in person is more fun. The problem

is your tablet's screen: perfect for one or two people but it will never feel smaller with five people crowded around it. This is doubly true for smaller tablets such as the 7in [Amazon Kindle Fire HD](#).

The good news is you probably already have a device in your living room which is perfect. Your TV is big, bright and no-one has to squint to see what's happening on it. There's an ever-increasing number of ways to get video and pictures onto it, from straightforwardly stringing cables around to ingenious – but often more expensive – wireless options that will propel your living room into the 21st century. Here we'll explore both options, as well as looking at the services that will let you share your subscriptions, photos and videos on the big screen – and those that won't.

Although we're talking predominantly about [Android tablets](#), the same advice applies to [Android smartphones](#).

Connect Android to TV: HDMI

HDMI (High Definition Multimedia Interface) is the interface standard du jour. If your TV was bought in the last decade it has an HDMI port, as does almost every set-top box, games console and a decent number of still and video cameras. The benefit to HDMI, apart from its ubiquity (which means it's cheap), is that it accommodates HD video and audio simultaneously, allowing you to connect devices without worrying about watching a film in full HD but having to make do with your tablet's tinny speakers. An HDMI output is an advantage that many Android tablets have over Apple's iPad.

HDMI plugs come in three sizes. Regular HDMI (or Type A, left) are the full-size ports you'll find on devices where space isn't an issue: think TVs, laptops and games consoles. The sockets you're likely to find on tablets and phones will be either Type C (also known as Mini HDMI, middle) or Type D (Micro HDMI, right). Of these, Micro HDMI, or Type D, is the smallest. Whichever type of port your tablet has, connecting it to an HDMI socket isn't going to cost you the Earth: expect to pay well under £10 (under £5 in some cases) for an HDMI to Mini- or Micro-HDMI cable.



A decent range of tablets have either HDMI or its miniaturised variants. The Acer Iconia A1, [Tesco Hudl](#), [Archos 80 Titanium](#) and Nokia 2520 – among many, many others – all offer it. It's the most straightforward approach.

You're not limited to buying a tablet with an HDMI output to connect it to your TV, though.

Connect Android to TV: MHL / SlimPort

HDMI is easy to understand: it's a port that only does one thing, after all. The drawback is that not all tablets have an HDMI output. The good news is that a pair of widely-supported standards have emerged that allow Android owners to connect to external displays using their microUSB port.

The standards in question are MHL (Mobile High Definition Link) and the newer SlimPort. Both look the same, which is stating the obvious as they simply use the microUSB port on an Android device to deliver video.



Like HDMI, SlimPort and MHL support both video and audio, with up to eight channels of surround sound available. Both normally require breakout boxes: a small dongle between your device and TV that converts the signal from your phone to one compatible with HDMI. Expect to pay between £10 and £25 for either a SlimPort or MHL signal converter. That makes things a little more expensive than using a tablet with an HDMI port, but MHL in particular is supported by a wide range of phone and tablet makers.

MHL has undergone various versions: we're currently on version three, which improves the maximum resolution to 4K. This is the same as SlimPort, and means both standards offer pretty similar technical specs. One advantage that MHL has is support from various TV manufacturers: look on the back of your TV, and if the HDMI port has an MHL logo above it, you can use an HDMI to micro-USB cable to connect the two - the HDMI cable will pass power to your tablet or phone, meaning no need for extra adapters or cables. Bonus.

If your TV doesn't support MHL, or you have a SlimPort device, you'll need an adapter. SlimPort users should expect to pay around £15, while MHL users may spend slightly less. If you're using MHL it's likely you'll need an external power source: MHL 3 can draw up to 10 watts from its host device.

With SlimPort no external power supply is needed (it draws a small amount of power from your device), making setup less cluttered. Both devices need a tablet's screen to be on, though, so breakout boxes normally come with a microUSB port so a charger can be connected.

Support for MHL and SlimPort varies enormously. With three different versions of MHL available plus SlimPort, you'll need to check the specifications of your device before buying an adaptor. The Microsoft Surface and Samsung Galaxy Tab 3 support MHL, while the Google Nexus 5 supports SlimPort.

Apple users have a simpler time: although the iPad is, technically speaking, compatible with DisplayPort, the only way to connect it to a display is with Apple's proprietary cables. The downside is cost: you'll pay £40 for an HDMI adapter that connects to an iPad's Lightning connector (a 30-pin version is available for older iPads).

Connect Android to TV: Wireless

There's little to beat the wow factor associated with beaming video straight from a tablet to your TV. The good thing about Android is that there's more than one way to do it. Miracast is

a wireless standard that creates an ad-hoc network between two devices, typically your tablet and a set-top box which supports Miracast.

An increasing number of TVs support Miracast without the need for extra hardware. Miracast uses H.264 for video transmission, which means efficient compression and decent, full HD picture quality. Better yet, Miracast supports Digital Rights Management (DRM), which means services such as iPlayer and YouTube can be streamed to a TV. Not all services work, though – see Playing Back Video below. Android devices running Android 4.2 support Miracast

An alternative is [Google's Chromecast](#). This inexpensive £30 'dongle' plugs into a spare HDMI port on your TV and connects to your wireless network. Chromecast support is burgeoning, which means content from services such as iPlayer, Netflix, BT Sport and others can be played with the Chromecast dongle doing all the legwork instead of your tablet, and that's good news for battery life.

As of July 2014, it's possible to use Chromecast to mirror the display on your Android device, allowing you to hit play on a tablet and have (non DRM-protected) video start playing on your TV. The same goes for anything the screen can display, including apps, games and photos.

Again, Apple users have an easier but more expensive time. The iPad and iPhone don't support any open streaming standards, so you'll need to get hold of an [Apple TV](#) (£79). This supports AirPlay mirroring from iOS devices only, and, like Chromecast, offers various streaming services including Netflix and Sky offerings Sky Sports and Now TV. BBC's iPlayer also supports AirPlay. Note that you can't use Sky Go to watch Sky programmes on your TV via AirPlay.

For more on iPad and iPhone streaming, [head here for our step by step guide](#)



Which devices support Chromecast mirroring?

Mirroring on Chromecast is new, and the list of devices that support it is currently limited. Own one of the following? You're in luck.

- Nexus 4
- Nexus 5
- Nexus 7 (2013)
- Nexus 10
- Samsung Galaxy S4
- Samsung Galaxy S5
- Samsung Galaxy Note 3
- Samsung Galaxy Note 10 (2014)
- HTC One M7
- LG G Pro2
- LG G2
- LG G3

Connect Android to TV: Making it work

Streaming video to your TV from your smartphone or tablet will depend on the setup you've gone for. If you're using a physical connection, such as HDMI, MHL or SlimPort, the content on your tablet's display will simply appear on your TV once everything's connected.

This is straightforward but has drawbacks. For one thing, your tablet will only send a signal when its screen is on. This means battery life will be sapped quickly, so it's likely you'll need to plug in its charger to stop it running out of power (or going to sleep) mid-show.

If your tablet has video you've supplied yourself, in the shape of non-DRM files, mirroring will work fine, and the same goes for various commercial services including Netflix, ITV Player and iPlayer. Life isn't all rosy, though. Content providers know consumers will pay extra for the convenience of streaming TV shows through their homes. Sky, for example, charges subscribers an extra £11.25 if they want to watch their Sky subscriptions in another room of their house. If you want to watch your Sky subscription on a tablet there's no charge; in fact, you can add two mobile devices per account. Plug in an HDMI cable or attempt to use Miracast and you'll find the limits of Sky's generosity though: outputting Sky Go's display to an external TV or projector is banned.

If you go wireless, Miracast is currently the best option for display mirroring, as it simply outputs the contents of your Android device's screen wirelessly. So, as with a physical connection such as HDMI, if you load a photo onto your tablet's display, it appears on your TV. The same goes for many apps: BBC's iPlayer, YouTube and Vimeo are all known to work via Miracast. The drawback for Miracast is the same as with a cable connection: your tablet's display needs to be running the whole time for it to work. That, coupled with higher demands for your device's wireless radio (particularly if it's streaming from the internet simultaneously) could result in precipitously lower battery life.

<http://www.pcadvisor.co.uk/how-to/google-android/3533870/how-connect-android-tv/>

How to connect your iPad to an HD TV

We explain step by step how to watch iPlayer and other videos

By Jim Martin | PC Advisor | 07 April 14



Whether you own an [iPad](#) or [iPad mini](#), their screens can't compare to the much larger [HD TV](#) sitting in your lounge (or even bedroom).

Unlike most [Android tablets](#), the iPad doesn't have an HDMI output as everything goes through Apple's dock connector. Fortunately, you can buy Apple's Digital AV adapter which gives you a full-size HDMI output and a pass-through dock port for charging your iPad at the same time.

The adapter is available 30-pin and Lightning versions for a rather expensive £39. You'll also need a standard HDMI cable to connect between the adapter and your TV.

Most TVs made in the last few years have an HDMI input, but if yours doesn't, there's a second way to hook up your iPad, via Apple's TV. This is Apple's media streamer which allows you to stream videos from iTunes on your laptop or PC, or rent or buy them directly from the iTunes store. It also supports AirPlay, which means you can stream video and audio directly from supported apps on your iPad.

It's important to bear in mind that there are limitations with both the cable and wireless methods about what you will see on your TV. For example, the Sky Go app will not allow you to use the HDMI output to watch shows on the big screen. Other apps have similar restrictions, so check if the apps you want to use allow HDMI output before investing in a Digital AV adapter or Apple TV.

Obviously, the Apple TV method is more expensive unless you already own one, but the first-gen model doesn't support AirPlay, so you can only mirror your iPad's screen if you buy a second- or third-gen Apple TV. **See also** our [Apple TV review](#)

With the wired method, the TV can act as a sort of extended desktop so you see different images on your iPad and TV. Some games put this to good use. Real Racing 3, for example, shows the circuit and other information on the iPad's screen while displaying the racing view on your TV.

You'll need an iPad 2 or iPhone 4S (or newer) to use all the features the Digital AV adapter supports. Connect an iPhone 4, for example, and you won't be able to use mirroring - you will only be able to use apps which support TV output.

How to connect your iPad to your TV: Apple Digital AV adapter



Step 1.

Connect the adapter to your iPad's dock connector.

Step 2.

Connect an HDMI cable to both the TV and the Digital AV adapter. (Note that you can also connect the HDMI cable to a suitably-equipped AV receiver rather than directly to your TV. You can then benefit from the better sound quality from the speakers attached to the receiver.)



Step 3.

Using your TV's remote control, select the correct HDMI input (sometimes they are numbered and the side input is usually identified as such). If you've connected an AV receiver, be sure to select the correct input. Many have a front-mounted HDMI input labelled AUX.



Step 4.

Turn on your iPad, unlock it and launch the Photos app. You should see the selected photo on both your TV and the iPad.



Step 5.

If necessary, you might need to adjust your TV's settings so the image displays correctly. Commonly the automatic zoom setting tries to avoid any black borders and distorts the image or zooms in and crops the top and bottom edges.

Step 6.

Launch the app you want to use. Most of Apple's apps support HDMI output, but some catch-up TV and video streaming services don't.

How to connect your iPad to your TV: Apple TV (2nd or 3rd gen)

Step 1.

Turn on your TV and Apple TV and go to Settings. Scroll down to AirPlay and turn it on if it isn't already. (We're assuming that you have already set up your Apple TV on your home network and have a wireless router to which your iPad is also connected.)



Step 2.

Turn on your iPad and launch Videos, Photos or Safari. You should see an AirPlay icon; if you're trying to watch a video, start it playing first. Tap the icon and choose your Apple TV from the list of devices. Here, we're playing Top Gear from the BBC iPlayer app – note that the iPad's screen shows the video poster image and doesn't mirror the video.



Step 3.

If your app doesn't support external displays, you might be able to use AirPlay Mirroring. To activate this, double-press the Home button, swipe right and tap the AirPlay icon (it will only appear if there's an AirPlay device in range).

You will see the AirPlay Mirroring slider – simply turn it on. If you have any problems, make sure your iPad or iPhone is using the latest iOS software (certainly iOS 5 or later).



Things look slightly different on an iPad running iOS 7:



Some apps don't support video output, but will still send audio from the app to your Apple TV, so you'll hear sound from your TV or whichever speakers are connected to your ATV.

<http://www.techadvisor.co.uk/how-to/apple/connect-your-ipad-tv/>

Apple TV review

Updated for 1080p video, the Apple TV is back with a new interface

By [Graham Barlow](#) from TechRadar July 22nd 2013

REVIEW

SPECIFICATIONS

WHERE TO BUY (30)

COMMENTS

TechRadar's rating



Average user rating



SHARE

240



TWEET

23



SHARE



EMAIL



For

- Very easy to use and set up
- AirPlay streaming rock solid
- Movies in 1080p HD quality
- AirPlay Mirroring with iOS devices

Against

- No TV tuner
- Still no iPlayer app!
- AirPlay is locked-down
- Movie rentals are expensive

<http://www.techradar.com/reviews/audio-visual/av-accessories/apple-tv-900409/review#articleContent>

Chromecast UK review

Transform your old screen into a smart TV

By [Matthew Bolton](#) September 3rd

REVIEW

SPECIFICATIONS

WHERE TO BUY (12)

COMMENTS

TechRadar's rating



Average user rating



SHARE

73



TWEET

4



SHARE



EMAIL



TechRadar's verdict

"Chromecast is a cheap and easy way to get video from iPlayer, Netflix and YouTube onto your TV. We'd like more apps but at this price who's complaining?"

For

- It's easy to use
- Multi-device support
- Easy to transport
- Cheapest media adapter

Against

- Not enough apps yet
- Mirroring limited to browser tab
- Windows Phone not supported
- Chrome is the only supported browser

<http://www.techradar.com/reviews/audio-visual/digital-tv-receivers/chromecast-uk-1171126/review>

Amazon Fire TV Stick fires straight at Google Chromecast

Amazon's streaming stick set to launch November 19

By Cameron Faulkner October 27th

COMMENTS



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11



TWEET

9



SHARE



EMAIL



Time to free up an HDMI port, as Amazon announced its Fire TV Stick. Similar in size to Google's [Chromecast](#) and the [Roku Streaming Stick](#), Amazon aims to destroy its competition with better hardware and a stunningly cheap, two-day special offer for Amazon Prime customers.

While similar to Chromecast and the Roku Streaming Stick, the Amazon Fire TV Stick tries to set itself apart in a few ways. It's compatibility with the [Amazon Fire TV](#) game controller is nice, opening up a selection of over 200 games to download. (Of course, that requires the \$40 standalone cost of the controller.)

Naturally, Amazon Instant Video is available from the get-go, an app sorely missing from the Chromecast. On the downside, the Fire TV Stick is missing HBO Go out of the box, but we might see it on the platform by year's end.

Related stories

[5 reasons Amazon Fire TV can take on Chromecast and Apple TV](#)

[Amazon reportedly firing up its Firetube media streaming device for Christmas](#)

[Amazon Firetube trademark hints at Apple TV, Chromecast rival](#)

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