

Orange: The Future of Festivals: Glastonbury 2050

In association with
THE : FUTURE : LABORATORY



foreword

Glastonbury is the jewel in Orange's music sponsorship crown, with 2010 representing our twelfth year on-site as official communications partner, as well as the festival's 40th anniversary.

Rather than digging into the festival's past, we wanted to focus on looking to the future during this momentous year. We have therefore commissioned trend forecasters The Future Laboratory to collate *The Future of Festivals: Glastonbury 2050*, an in-depth investigation into the changing role of technology and communications at the festival of the future.

The heart of a festival has always been the enjoyment of a shared, live musical experience. However, over the years, festival-goers and music fans have become less bound by geography and the need to be physically present to get a true experience.

We hope you enjoy this vision of a future where we're connected in seemingly unbelievable new ways and that, like Orange, you're excited by what it holds for the festival experience of tomorrow and in this case, Glastonbury 2050.

Paul Jevons
Director of Products, Portals and Services
Orange

04	where are we now?
05	the big festival trends
06	beaming bodies
08	massive media moments
10	supersensorial
13	off the grid
15	encore

where are we now?

Glastonbury is the largest and most highly acclaimed music festival of its kind anywhere in the world with more than 135,000 people attending in 2009.

Since Michael Eavis founded the event on his dairy farm near Pilton, Somerset, it has attracted more best-selling bands, awe-inspiring performers and emerging talent than any other festival. And every year it gets bigger, better and more popular, usually selling out on the first day of sale.

This year saw the fastest sales ever, with every ticket snapped up within one hour.

In 2010, the festival will be broadcast on global television for the first time to a potential audience of billions. While technology is making music more accessible, the festival experience, the sense of actually being there, is becoming more precious and that trend will continue between now and 2050.

Festivals in general are important because of the sense of community they generate. Listening to the music is only half the fun. You're also part of a crowd, one of thousands of people who have come to the same place for the same reasons and to share the same experience.

While people will be increasingly connected through social networks, it's this real-life feeling of community that will become truly valuable.

Jon McIlldowie, concert promoter:

'Society is becoming more fractured and people are less sociable in a physical society, making the importance of festivals as a communal experience grow and grow.'

the big festival trends

There is no sign of Glastonbury becoming any less popular. It's a rite of passage. You never forget your first time, and after you've been once, you want to go back, which explains its enduring popularity with students, young professionals, parents and grandparents.

While digital music tracks are becoming cheaper, festival tickets are in high demand. According to the PRS for Music, festivals generated an estimated €450m (\$635m or €522m at current exchange rates) for the British economy last year. Festivals are not going away.

In fact, technology is set to enhance festivals. Already, thousands of festival-goers broadcast and share their own experience through video clips, Twitter, blogs, photos, emails and status updates, and technology will increase the ease and variety of ways in which we communicate.

The crowd will be able to share their thoughts with their friends at a festival and with the wider world, forming a huge global audience who do much more than watch the bands on tv. They'll get a sense of what it's like to be there.

Emily Eavis, Glastonbury organiser:

'It's amazing that people can watch what's happening live on the Pyramid Stage from all over the world. It's great that people are involved beyond the immediate crowd.'

Personal experience will come to replace mass production. Technology will be able to recognise you, tailor itself to you, and let you express your own voice like never before. And all of this will be achieved in a green and carbon-neutral way.

In this report, we will explore four key areas within which we expect the most important and exciting developments to take place:

- beaming bodies
- massive media moments
- supersensorial
- off the grid

beaming bodies

It's not always easy explaining how it feels to be at a festival. Photos, videos and words can only say so much.

By 2050, smart devices and nanotechnologies will make that process much more direct. Sensors will broadcast exactly how you feel, measuring your physical and emotional state and telling the world (or just your friends) what an amazing time you're having.

cerebral networks

The main advance will be in nanotechnologies, both inside and on the human body, designed to transmit information to others. They will capture what you see, hear, smell and feel as you savour the festival experience, giving a genuinely personal perspective of the festival.

These systems are already in development. The Harvard Business School Life Sciences Project claims that the ability to engineer cells and tissues and implant robotics into the brain will lay the template for a whole new species: Homo Evolutis.

Mark Watts-Jones, head of development and innovation at Orange UK:

'New technology can help to bring others closer to the festival experience, giving them a deeper understanding and a stronger sense of the real world experience.'

inner media

While cerebral networks record your experience, new systems will also allow people to 'play back' and enjoy those experiences directly. The idea of unedited, sensorial content will be the norm by 2050, with the stimulus input straight into their bodies.

According to futurologist Ian Pearson from Futurizon, we'll have tattoos painted on our skin that will connect us to the internet, allowing us to feel our friends' reactions and their sensations of an experience.

hypercolour emotions

While brain implants and digital tattoos may appeal to some, others will prefer classic digital devices that transmit and receive content. Philips and ABN AMRO's brainchild is The Rationaliser, a bracelet that monitors the wearer's emotional state via a skin sensor, linked to a second device that immediately translates these measurements into colours for everyone to see, and into a secondary live stream of data online.

Not only does it look good, but it also acts as a beacon for other festival-goers, showing precisely where they can find the most exhilarating or relaxing places on the festival site.

Mark Watts-Jones, head of development and innovation at Orange UK:

'Technology will measure how we feel – say, watching a particular band – and put together all this information to act as an intelligent guide around the festival. It will help us discover new, exciting and relevant experiences.'

heart on your sleeve

Clothes are moving on too, letting you experience how other people, even the performers themselves, are feeling. Smart technologies embedded in festival-goers' clothing will convey how the band is feeling as the adrenaline and pheromones escalate during their set.

The same technology will be used to monitor the feelings of the crowd or individuals, so sensors might recognise if they become overwhelmed or aggressive, and offer a dose of a suitable pheromone to counterbalance the negative surge and make them feel more positive.

Simple developments in smart textiles are already taking place. Jeannine Han, a Master's student in textiles and fashion design at the Swedish School of Textiles in Borås, Sweden, is developing clothing that plays music when touched.

In addition, researchers at the Massachusetts Institute of Technology in Boston have developed a system that enables a crowd to alter the tone and volume of a performance by raising their arms in the air. The system uses a single piece of hardware, a multicoloured Lycra glove that could be manufactured for around one dollar.

These systems aren't very far from reality.

it's what's on the inside that counts

Money. It's absolutely necessary at a festival, but when you're camped out in a tent it's also a constant worry. Not so in 2050. Money will be carried and exchanged using electronic devices or even your own body.

In India, Vortex Engineering and ICICI Bank have already developed a web-based fingerprint identification ATM for rural India. The ATM, called Gramateller INDI, will eliminate the need for PINs and cards because fingerprints are used instead.

Some mobile phones already have near-field communication chips (NFCs) built into them, allowing you to pay for your coffee by waving your phone close to a sensor. In 2050, you could have one of these chips under your skin, making it an in-built festival pass, debit card, ID card and even a phone, all in one.

Voice recognition and retinal scanning can also be used to authorise payments, so signatures, pickpockets and dropping your wallet in the mud will all become things of the past.

But being hard-wired in this way may have its drawbacks. A scientist at the University of Reading has already become the first human to become 'infected' with a computer virus as part of research into the potential risks associated with electronic devices implanted into humans. Anti-virus technology is going to have to keep up with all these innovations too.

massive media moments

Festivals are now open to an audience of billions of connected people. Online video, live broadcasts, highlights packages, dvds, subtitled versions, news reports and mobile video clips... There are already so many channels and formats today and the list will grow longer as new technologies let you connect with different aspects of a festival in a way that brings it genuinely into your home, wherever that might be.

Dr Peter Lovatt, psychologist and dancer:

'The way we broadcast now misses something that is fundamental to the festival experience. We either see the mass of people, which means the viewer can't identify with the individuals in the crowd. Or the viewer just sees the performer on stage, but then doesn't get the sense of community. It's very difficult for the viewer watching it on screen to get the full experience, so it's up to technology to bring the full experience a little closer to those tuning in.'

the semantic web

The internet is changing. At present, links and searches are rigid, always giving the same results wherever and whoever you are. But as it becomes more sophisticated, the web is becoming smart, empathic, thoughtful and intuitive – a thinking semantic web that understands what you want.

Companies such as Powerset and semantic search engine Hakia are already hard at work bringing the new semantic web to life. With this new internet, you'll be able to do keyword searches for emotions as well as facts, and for moods rather than specific needs. If you're watching a festival, it means you can look for music or video or sensory recordings that match the kind of mood you want and the web will be smart enough to pick the things you'll most enjoy.

Melek Pulatkonak, chief operating officer of Hakia:

'At the moment, the user has to do all the work. Soon, the net will be intelligent. It will read and digest the content of the information provided, and it will make informed decisions about what you want to see. This web will one day even be sophisticated enough to adopt an attitude as it trawls through the data, mirroring and thinking about the mood of a viewer.'

Rather than having just one authorised broadcast of the festival, there will be thousands of micro-broadcasts from organisers and festival-goers, all tagged with semantic information making them searchable and mixable. Want to create your own playlist? Easy. Want something with happy lyrics? No problem. Want the most relaxing track at the festival? Check the audience reactions and see how they experienced it.

So, by 2050, a keyword search for 'Glastonbury dance adventure' for example, could offer a package of the headline act on the Pyramid Stage, Dance Village and the Alleys of Shangri-La, a multi-sensory experience capturing the music, crowd, atmosphere and energy of the live event, delivered straight to you.

Mark Watts-Jones, head of development and innovation at Orange UK:

'In effect, you'll be able to experience the festival wherever you are in full 3D or holographic formats, and overlay what you're seeing live with other personalised experiences – you could slow things down, replay your favourite bits, change views in real time or share your experiences live with other fans around the world.'

curated content

All these micro-sliced viewpoints of the festival will bring new life to the festival compilation. There will be no more mix tapes or highlights videos. By 2050, you'll be able to mix and remix your own version of a festival – or enjoy someone else's version of it.

Festival-goers will be able to create films, mood boards, audio soundscapes and sensory maps of their experiences, to create and purchase their own 'views' of the festival based on musical, cultural or emotional preferences. Everyone will be an editor. Impose your individual taste on the festival and you might attract an audience of your own.



“Glastonbury festival 2050 – live in your living room”

extraordinary experience

As technology improves, audience expectations will grow in such a way that, for example, an extraordinary visual effect feeds into audiences’ demands for even more exceptional effects in future productions.

The way we will consume content in the home will see the functionality of tv, as we know it today, evolve to become an integrated part of the home infrastructure. It will no longer mean a static box in the corner of the room, but a device that can convey, for example, a holographic, multi-sensory live festival feed into your living room or anywhere.

As part of their bid for the 2022 World Cup the Japanese say they will project live holographic versions of football matches directly onto the pitches of stadiums around the world.

To a less advanced extent, holographic performances are already a reality. In September 2009, Orange rolled out the UK’s first ever multi-artist hologram tour. Monkey Hologram Gigs featured holographic performances from Pixie Lott, N-Dubz and Tinchy Stryder.

supersensorial

Radio lets you listen. TV lets you listen and watch. By 2050, a blend of 3D, HD, HG (holographic) and AR (augmented reality) technologies will let you watch, hear, feel and even smell your favourite artists as they perform. You'll also be able to influence and interact with the performance as it unfolds.

For performers and festival organisers, the trick will be to balance these layers of technology with the immediacy of the live performance, enhancing the experience, not overwhelming it.

Mark Watts-Jones, head of development and innovation at Orange UK:

'The connection between artists and fans has always been an intense one that future technologies will bring even closer together using crowd-sourcing technologies, real-time feedback and new ways for fans and artists to interact together.'

strengthening the connection

A great performer can sing to an audience of 20,000 and make every one of them feel like the song is just for them. They can improvise and communicate. Their performance is a conversation, not a recital. And technology is helping to reinforce this connection.

This isn't just about showing the audience's tweets on a screen on stage. It's about making the furthest person from the stage feel like they are in the front row.

There are some communication traditions that are iconic, such as the flags at Glastonbury's Pyramid Stage. They're part of the festival landscape, but at the same time they're criticised for blocking other people's views. In the next 40 years, the issue of the flags will be solved with the development of holo-flags: holograms that convey multimedia messages to the performer in a live feed, sent by the audience. More people will see the stage and they'll be able to make themselves heard too.

getting intimate with 3D

One of the biggest developments in festival performance will be the evolution of 3D. Technology developers such as HoloVision, Hitachi and HDI are focusing on a future in which 3D glasses will be obsolete and audiences will be able to enjoy 3D video without the hassle of wearing glasses.

Using holographic projection and laser technology, you'll be able to have sounds and images of the artist performing on stage beamed to your tent or anywhere in the world. This will enable you to be serenaded, rocked and rapped to one-on-one while the artist performs live on stage.

mind control

Meanwhile, a new breed of products is in development that will be controlled by voice, gesture and the mind. Softkinetic, a Brussels-based software company, has teamed up with US semiconductor giant Texas Instruments to develop 3D gesture-recognition software that allows viewers to change on-screen content with the wave of a hand.

Hong Kong-based technology developer VTech has already launched a children's game harnessing the power of mind control, while Xbox's Project Natal dispenses with the need for a controller and uses 3D gesture-recognition software to project you directly into what you see on-screen.

Using these technologies will be second nature by 2050, so festival-goers will be able to interact and direct their personalised festival experience more easily than ever.



“The iconic flags become holograms at Glastonbury 2050”

haptic happiness

And it doesn't stop there. Haptic technology provides tactile feedback by applying forces and vibrations, literally making you feel the action.

Festival-goers will use this textile-based technology to feel the physical sensations of remote objects, such as the thrum of the bass-line or the swaying of the crowd. Kitted out with haptic clothing, users will also be able to electronically touch and feel one another, whether they're on opposite sides of the festival site or on opposite sides of the world.

Combine that with holographic technology and things become really interesting. Haptic feedback allows you to reach out and touch a holographic object as if it were real. Imagine being able to hug and kiss a hologram of your favourite artist while they were singing live on stage.

Mark Watts-Jones, head of development and innovation at Orange UK:

‘Haptic technology shows a whole new way of interacting and opens up endless possibilities. This ability to feel and touch will embellish the experience and encourage consumers to engage and create.’

retinal content

A good festival can change the way you see the world, and this will literally be the case in 40 years' time. Retinal technology will use contact lenses to add a layer of information or art on top of what you see. It will be like seeing the world with your own special effects.

Prototypes of these viewing devices already exist. Retinal projectors using lenses and an LED are being tested for use by the partially blind, while an electronic contact lens that receives information beamed to the wearer's eye is under development for pilots and drivers.



personal augmentation

If contact lenses make you squeamish, there are other ways of adding that extra layer to what you see. Augmented reality (AR) is already starting to become part of mainstream culture, letting you see the world through a camera that adds information and visual effects to whatever you're looking at. Many mobile phones already have this capacity.

At a festival, this opens up some fantastic possibilities. AR will make the Glastonbury 2050 experience highly personalised, letting you see digital graffiti left by friends at meeting spots, recommendations to see certain bands play, or a trail of virtual breadcrumbs back to the tent at the end of the night. Given that the Glastonbury grounds cover over 900 acres, this will be particularly handy.

Karl Kempf, Intel Fellow and director of Decision Technologies:
 'We haven't seen a physics limitation to Moore's Law. In the future, we might run into quantum mechanics limitations, but we don't feel the pinch of that yet. Technology companies will continue to push the boundaries and build more and more powerful technologies for the masses.'

"Navigation at Glastonbury festival 2050"

off the grid

One thing is certain: by 2050, energy resources will be more precious than ever. A music festival is a pop-up city and in 40 years, every city will need to be energy-efficient – in fact, international deadlines are already dictating that every country and society will need to be carbon-neutral long before then.

Glastonbury, which has always had strong green credentials, and other festivals of the future, must employ new forms of renewable energy and use their own power supply to meet their requirements. Festivals will be self-sustaining, existing off the grid, neutralising their impact on the environment and local surroundings by becoming lean and green.

Emily Eavis, Glastonbury organiser:

‘Glastonbury has been championing green ideas for a long time. We are trying to be as green as possible, with solar power key for this year’s event. We have the biggest solar power unit in Britain that will power much of the farm, and the rest will be sold back to the grid.’

world without oil

With fossil fuels all but wiped out by 2050, we’ll have become accustomed to getting our energy from a wide variety of sources. As well as wind turbines, we’ll be using solar panels, hydropower, geothermal energy, hydrogen, biomass stations (plant matter grown to generate electricity), osmotic power (using the movement of water molecules across a partially-permeable membrane to generate energy) and thermoelectric power.

The latter will be a particularly useful development. Thermoelectric devices apply a different temperature on each side to create a voltage, generate electricity, measure temperature, or to cool, heat or cook objects.

Recently this technology was unveiled in Orange Power Wellies, a collaboration with renewable energy experts GotWind. The wellies incorporated a thermoelectric power-generating sole to convert heat from the wearer’s feet into an electric current. We can already harness this power to charge mobile devices, but by 2050 this could be a key method for festival-goers to meet all their energy supply needs.

festival islands

If you’re out to have a good time at a festival in 2050, it will be vital to feel that your fun isn’t having a negative impact on the environment. It will be part of the festival mindset.

The idea of a self-sustaining community is entirely achievable. Festivals will sit alongside other developments. Zira Island in the Caspian Sea, for example, developed by Bjarke Ingels Group, is set to be the first island that is entirely independent of external resources, demonstrating to the world that high-end living can be combined with low-end power consumption.

eco emblems

Being environmentally responsible might seem like hard work now, but in 40 years it will be seen as the epitome of style. Reckless use of energy will be reprehensible and people will be keen to flash their green credentials whenever they get the chance.

According to a recent survey by British Gas, many consumers (45%) already agree that being environmentally friendly will increasingly be the new status symbol by 2020.

As UK festivals are largely summer events, photovoltaic fabrics will increasingly become de rigueur for all festival-goers, as demonstrated by the Orange Solar Concept Tent in 2009. This technology captures the sun’s energy and provides all the power you’ll need for the 100 hours you attend the event. Cheaper printable solar panels and spray-on protocells (turning your tent into a miniature garden for moss and plants) will make tents even more eco-friendly.

To encourage green behaviour in 2050, priority access could be awarded to those with the most responsible energy consumption at the festival or in their home community. Recyclers will be the new VIPs.

Martin Raymond, editor-in-chief of LS:N Global:

‘The challenge is to make positive climate change behaviour visible. Rather than a future benefit, we need to make climate change a present status benefit for consumers.’

smart hydrogen

In research published earlier this year, scientists at MIT showed how they have made progress in their efforts to produce green energy through water and sunlight alone. The scientists are using genetically modified cells to replicate photosynthesis, using the sun to split water molecules into oxygen and hydrogen in order to produce chemical energy.

Once a much larger, more efficient process has been developed, the result will be unlimited hydrogen fuel that can be used to generate electricity. This could be a green energy source for the festival of the future, powering everything from amps to electric vehicles.

hydro haven

It's not just about power. According to the Met Office, summer heatwaves will become common by 2050 and festival-goers will battle soaring temperatures as a result of global warming. The festivals of the future will need to be responsible for their own water supply and management.

Reservoirs could prove to be a vital lifeline for festivals, with fields, foliage and festival-goers building up a thirst. Glastonbury has already built a second reservoir on the site, with the aim of making the festival completely sustainable for water.

grow your own festival

Stages, tents, domes. The festival infrastructure can consume a large amount of energy and materials, but that also makes it a potential area for change. In the future, 'grow-your-own' materials will enable organisers to grow the supplies needed to build the festival's core areas.

Suzanne Lee, senior research fellow in the School of Fashion and Textiles at London's Central Saint Martins College, is experimenting with bacterial-cellulose organisms to grow clothes. A dome housing a festival may be able to grow itself, minimising the environmental impact of its production and introducing a managed microclimate.

print your own shoes

Print-your-own, or PYO, will also become a reality. Fab Labs are digital fabrication laboratories that allow people to invent and create items by printing them using 3D printers. Professor Neil Gershenfeld, the founder of Fab Labs, believes the dawn of the personal fabricator is upon us. Describing it as 'a machine that makes machines', the personal fabricator allows consumers to develop, design or download a product and supply it with the raw materials to have it 'printed' specifically for them.

These machines will be able to print anything using nylon and porcelain. So at Glastonbury 2050, festival-goers, performers and stall-holders will be able to travel light and print any equipment required on arrival, from bags to clothes to shoes to crockery. And because they're made to order, they can be customised to your own specifications. No waste, no worries.

value returns

Emily Eavis believes one of the biggest causes behind the amount of rubbish left behind after today's festival is the lack of value now attributed to belongings, with the last generation in particular growing up in a climate of disposability and plenty.

Material value will return as resources are depleted and become more precious. In 2050, the throwaway factor will diminish with a growing demand for products built to last.

Emily Eavis, Glastonbury organiser:

'It's so easy to bring cheap gear and then leave it behind because people have no value attached to it. The value has definitely switched and we need to get that back. It's a big message and a challenge to get that into people's minds.'

encore

While technology is changing the way we live, people will always love music. They'll always love the energy and the atmosphere of a festival and the excitement that comes from being there in person.

Technology will enhance that experience. It will bring you closer to your friends and to the artists on stage. It will give you the chance to take part, not just sit back and listen. It will let you enjoy the festival experience wherever you are, in a more tactile and immersive way than ever before. And it will let you do all this while protecting the planet, effortlessly generating your own power and leaving no mark behind on the environment.

Music will change and trends will come and go. But at Glastonbury, in particular, there will always be the power of imagination and boundless creative energy.

For the final word, we're turning to Mark Frith of Time Out London, a man who knows a thing or two about festivals...

Mark Frith, editor of Time Out London:

'More and more people will be engaged and more open-minded about what Glastonbury has to offer. It can't be stereotyped. It's Glastonbury. It can be everything.'

