



## Service Experience

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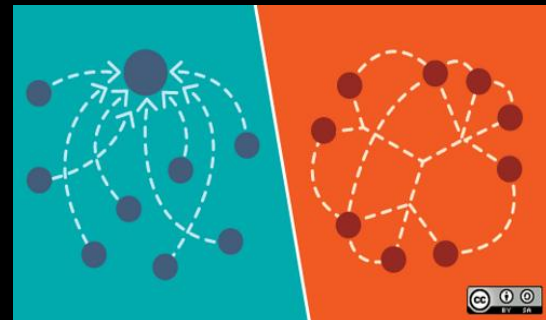
## Service disclaimer

- *This presentation purely concerns BBC R&D research and our views of the future*
- *There are **no guarantees** that this research will translate into future BBC services. This presentation must not be construed otherwise.*

# Some discussion points

- What is service experience?
- Needs of Service provider, Operators, Equipment Manufacturers
- Context
  - UK Media: technology, statutory and regulatory landscape 2011 - ...
  - Communications Act
  - Connected Home
  - Video will be king
- Engaging with the service experience

image: opensourceway



## Service experience: the sum total of ...

- UX, QoS, QoE and content
  - Interaction Experience
  - “Goodness” of service requests and responses
  - Distribution pipes
- Get it wrong at your peril
- Measure it ... Control it

# Needs of Service Provider, Operators, Equipment Manufacturers

- Assess and control service experience
  - Through measurements
    - Consumer's content needs
    - Consumer's attitude to service
      - Direct or implied by aspects (under)utilised
    - Dynamic service aspects
  - Through content adaptation
    - Device and bearer properties
- Marketers, Sales, Engineers
  - Shape decisions on measurements

# UK Media: technology, statutory and regulatory landscape 2011 - ...

- Broadcaster
  - Multi-platform content distribution
    - Analogue and Digital Broadcast TV and Radio
    - Fixed and mobile cellular networks
    - No mobile broadcast
  - Live and catch-up digital content
  - SD, growing HD, some 3D, Super Hi-Vision trials
  - Hybrid (Connected TV)
- Mobile devices
  - 3G evolution (HSPA)
  - Smartphone. Tablets.
  - Browser, CSS3 – HTML5. Widgets.
  - Apps. App Stores
  - OSes

# UK Media and technology landscape 2011 (cont'd)

- Web
  - From broadcast model (Web 1) to interactive model (Web 2) to Semantic model (Web 3)
- Home ... Gadget heaven and hell
  - Digital TV and radio, 3D TV
  - Digital picture frames, cameras
  - Game consoles
  - Some media interoperability across devices
  - WiFi, initial Femtocells
- Broadband (2 Mbps everywhere, 90% coverage superfast)
- Digital switch-over and white space

# Communications Act – Jeremy Hunt’s speech at Royal Television Society

- <http://www.guardian.co.uk/media/interactive/2011/sep/14/jeremy-hunt-rts-cambridge-speech>
- Capitalise on UK digital and creative industries
- Local TV stations
- Promote growth
  - Superfast broadband
  - Superfast mobile
    - Internet of things
    - 4G
    - Spectrum auctions
    - Access for smaller companies
    - Mobile TV
  - On-line cross-border transactions
- Media plurality across platforms
  - Converged regulatory framework (newsprint, on-demand, IPTV)
- Protect Intellectual Property





## Video will be king

- Major role for service providers
  - On-demand, adaptive + linear TV
- Multi-device sync'd interactions
- Broadcast
  - Individuals and groups engaged via multi-device
  - Nation and regions via DVB-T\*
- Internet
  - Video management on massive scale
  - DTV multiplexes full
  - Content-aware networks?
  - Companion device content

## Video predicted usages

- Will surpass text and images for interactions
- AV content design analogous to UX design for a product or service.
- Examples
  - How gadget or service works
  - What's happening in social work
  - Help in the home



Photo: laffy4k



Photo: Mark Barnes



Photo: DuncanUnderwood

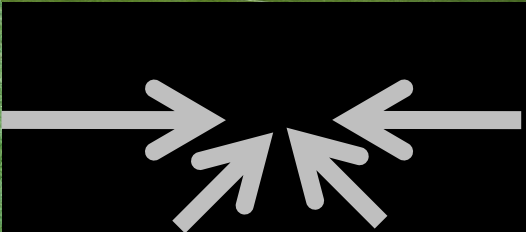


Photo: soctec

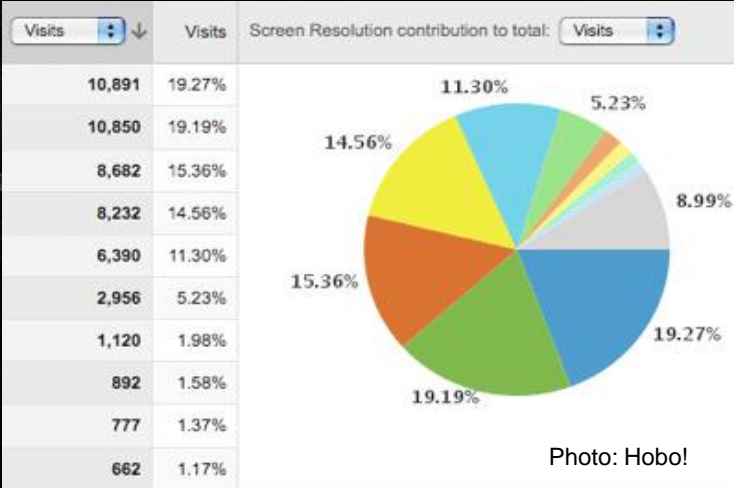


Photo: Hobo!

# Why engage through the service experience?

- The bad old days ...
  - Unsure of service take-up
  - Unsure of consumer's response
  - Still ... sale made(?) ... job done
  - *Oh well ...*



# Service experience is not just technical ...

- Engage US
- Great content
  - What we want
- Great applications
  - Where we want
  - When we want
  - Don't make us think!





# Service experience factors ...



Back-end service architecture.  
Shaping information.  
Content adaptation

Video streams.  
Apps. UX at interaction points.  
Context. Interoperability. DRM.  
LAN reliability.

Distribution infra-structure and information

# Don't forget Accessibility

Austin Seraphim ... My First Week  
with the iPhone

Photo: combust



Analogue interfaces are  
disappearing

Physical interaction with EPG is  
much harder (blind, paralysed,  
dyslexic, ...)

Expose control and information  
layers in TV (Universal control)

## Service experience addresses the future market

- Where there's interaction  
...differentiate by experience
  - Front-end UX
  - Distribution
  - Back-end
- Requires dynamic information
  - *Measure*
  - *Adapt*

## Future service experience – dynamic combination of ...

- Front-end UX and dynamics
- Infrastructure and dynamics
- Back-end (Internet) service(s) and dynamics
- Content
- Customer care
- QoS, QoE

# Front-end UX and dynamics

- UX design
- Information about dynamic state of front-end service
- Information about the environment, context and accessibility requirements of the service user. Former two are dynamic.
- Information about dynamic user-service interactions and user journeys
- Information about the user's device capabilities
- Adapting to infrastructure and back-end dynamics

# Infrastructure and dynamics (LAN, WAN)

- Capabilities
- Available dynamic resources (QoS)
- Information about dynamic state of the infrastructure

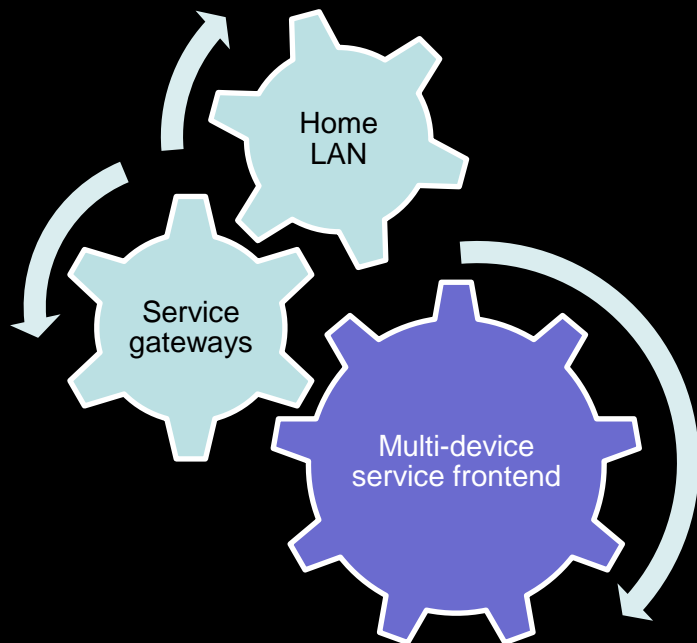
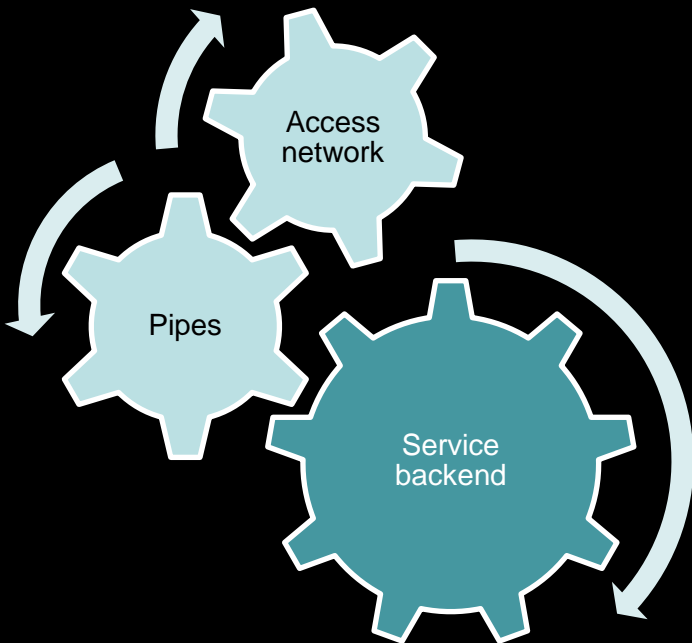
# Back-end (Internet) service and dynamics

- Architecture, scalability, QoS etc.
- Available resources
- Information about dynamic state of back-end
- Adaptive content combinations (resolution, bitrate, media types)
- Seamless transition across service levels in response to conditions (adapting to front-end service dynamics)

Back-end service architecture.  
Shaping information.  
Content adaptation



Video streams. Apps.  
UX at interaction points.  
Context. Interoperability. DRM. LAN reliability.





## Potential research areas

- Multi-device service experience design including remote access without mandating the look-and-feel of the UI on the device(s) performing that remote access
- Multi-device input/output modalities
- Synchronisation capabilities to allow content and events to be sync'd across devices
- AV content experience design: embedded interactivity in AV
- Determination of properties and dynamic infrastructure that need be exposed to allow service provider to make informed decisions on service experience feedback. Measurements should not impact the service experience
- Ditto for end-user device capabilities
- Adaptive content combinations reflecting dynamic conditions (front-end user accessibility, device, location)

# Conclusion

- Service experience perceived by a user comprises the synergy of
  - front-end UX
  - infrastructure meeting its QoS requirements,
  - back-end services meeting their QoS requirements
- Many if not most services will be AV related and will span multiple devices concurrently, synchronized as needed.
- Service experience will differentiate service provider's offerings, and determine market share.
- Measurement and control are vital
- Don't make the consumer think how to engage service

# Thank you

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