State of Play – Integration of IP in German Broadcast Networks

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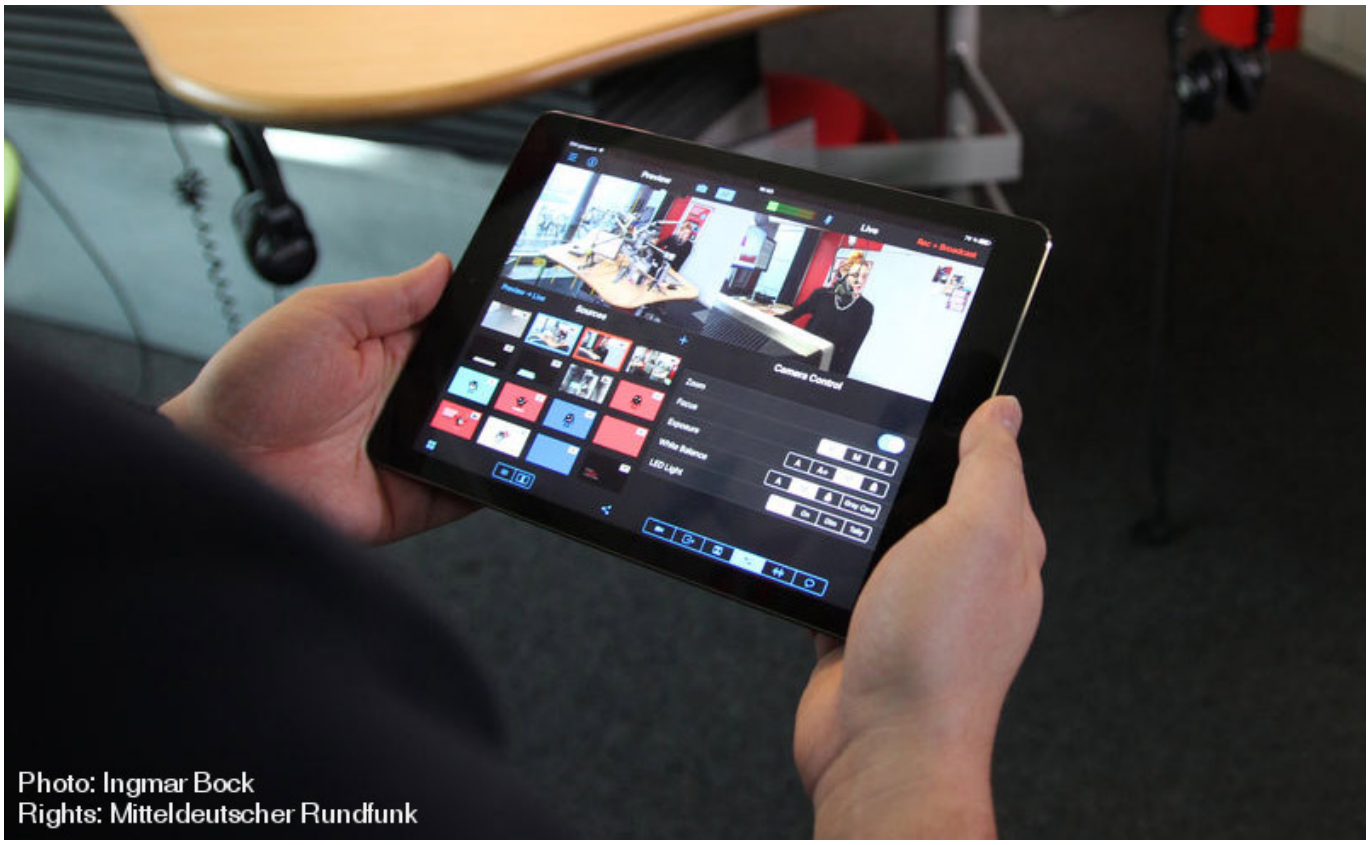


Transmission over IP networks offers broadcasters the possibility of interconnecting radio, video and internet perfectly. As a result, some radio stations and recording studios are already fully equipped for live streaming. Especially smaller studios as well as newer, more modern radio stations are absolute pioneers, simply because IP transmission is significantly more cost-effective than older ISDN based solutions. Looking at the newer, more modern radio stations IP streaming offers indeed attractive possibilities to interact with their target group optimally e.g. via Facebook or YouTube. But some broadcasters are still using conventional transmission techniques – reasons why:

- The existing technology is still working and there is no need of purchasing new equipment.
- The roll-out of the broadband and fiber-optic networks is still incomplete. As a result, transmission via IP is not yet possible everywhere in Germany.
- Until recently, it was simply hard to imagine using DSL lines in content distribution in a reliable, uninterrupted way.
- Some stations do have target-groups that are interested in using web services or mobile devices.

On the other hand, both small recording studios and even young radio stations are

absolute pioneers in using IP transmission due to cost efficiency. In addition, their young target group has a very strong affinity to web services like Facebook, Youtube as well as IP streaming

Conclusion: The skepticism is mainly caused by the fact that the implementation of IP as a central transmission medium entails considerable changes in terms of current processes and established structures. Not only does the replacement of old equipment introduce extra costs, but there is also the necessity to completely rebuild the entire transmission chain - from the studio site to the transmitter site. It is therefore understandable that broadcasters are reluctant to jump right in.

Why should broadcasters nevertheless make up their mind to switch over to IP in nearer future?

Mainly, because providers are discontinuing the ISDN service in the nearer future, which makes a switch to IP unavoidable. Another important reason is the changing media usage behavior. A recent study of the German public broadcasters „Media Perspektiven 09/2017“ clearly points out that end customers changed their habit of consuming media content.

About 81.6 percent of the younger target-groups at the age of 14-29 years are using online audio content at least once per week. Over all age groups, that percentage is still at 45.7 percent. Especially the use of OTT devices increased enormously and has now reached a market penetration of 82.4 percent of the population over the age of 14 years.

FM radio stations are not as strongly affected by this trend. The Digitalization Report 2017 (published by: die medienanstalten – ALM GbR) clearly points out, classical transmission of radio programs is still indispensable, even though it has lost significant market share to DAB+ and IP in the last five years. This slow, forward-moving change in radio listeners' usage behavior is the reason why German broadcasters are undergoing a transitory period in which established ISDN, SAT or FM broadcast equipment is still in use. In addition, due to the above mentioned non-area-wide availability of IP, at least temporarily hybrid solutions are in demand. These solutions include terrestrial and / or satellite transmission technology for encoding, transmission and decoding as well as IP in parallel and support a wide spectrum of codec algorithms as well as protocols. Meanwhile, some stations already implemented devices and servers for flexible transmission – some examples: many French radio stations, which have switched from DVB-S to DVB-S2 in recent years, use IP as well as satellite for transmission, depending which signal source is the best available. Norway uses SAT transmission for the DAB+ signal in parallel to the older transmission paths via E1 line (PDH / SDH networks). For this purpose, the DAB+ data is embedded into the satellite signal at the uplink station. From there it is distributed via satellite to inaccessible or rural areas, where is not financially feasible to build broadband or fiber optic networks.

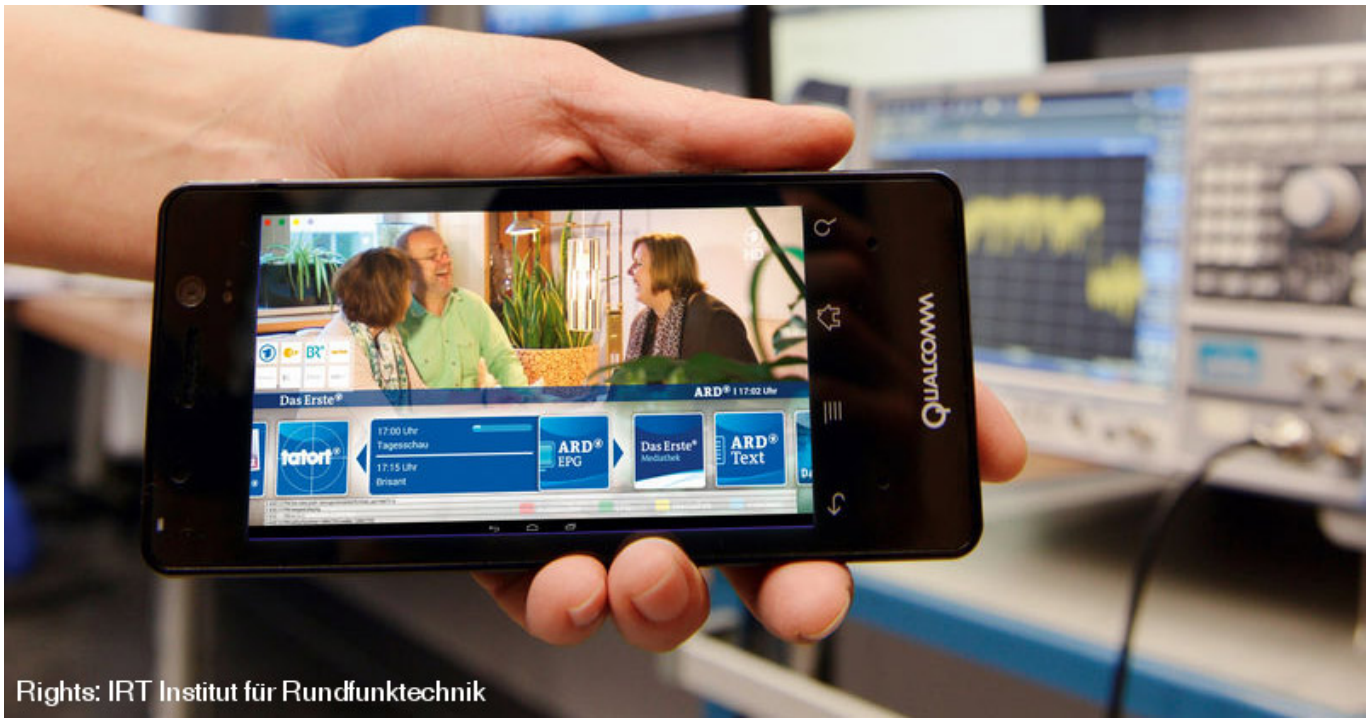
Even if IP technology is not the focus of attention of listeners and radio stations

right now, it will gradually be integrated into the existing structures for three good reasons: optimized cost efficiency, optimized target group orientation and better adaptation to a worldwide changing technical infrastructure of broadcasting.

Do not overrate obstacles, instead realize the chances IP offers for special applications

There are many special use cases, where IP has clear advantages. In audio description, which helps blind and visually handicapped persons with an acoustic description of what is happening on the screen to better follow e.g. the story of a film or what is happening during an event, short delay times in signal transmission is extremely important. For this purpose a fast codec algorithm like PCM can be used, which is supported by IP-based audio networks.

Object based audio gives persons with impaired hearing the possibility to reduce, for example, the background noises in audio content to be better able to understand people speaking.



The second screen applications for HbbTV2, which we saw at the stand of the Institute for Broadcasting Technology at the exhibition Medientage 2017 in Munich, go one-step further. Various end devices can be connected to the television. Persons using the devices are able to watch the same program but individualize the audio. For example, a TV show can be heard in different languages on each device. You can configure the intensity of background noise or voices. Using augmented reality glasses connected to the TV, deaf people can perceive a holographic simulation of a person showing a program simultaneously in sign language.

Hence, for the end customer, the afore mentioned solution approaches offer clear advantages even to deal with handicaps. Not only the private end user can benefit, IP also supports the concept of cross-medial working methods, which a handful of pioneer broadcasters are gradually integrating into their operational processes. To realize this approach, the different techniques of journalism, production and transmission paths must be harmonized. But first of all, why are we talking about cross-mediality at all and what does this mean in practical terms?

1. Target-group orientation: For the younger generation, listening to the audio is not enough. To be attractive, media content must provide at least also pictures or videos and has to be responsive for mobile devices. Especially radio stations are eager to attract this young and dynamic target-group. Basically, it is all about ensuring customer loyalty and attract new ones by being able to offer exactly the medium to every group of people that they want to use for listening and / or watching.

2. Cost and time efficiency: By treating a production as a cross-media project, the divisions of TV, radio and the Internet will become less deep. As a result, resources can be used in an optimized way.

3. Expand the value chain and attain interaction: As the produced content is broadcasted via all media, it is not transmitted singularly, so that radio, TV and Internet can refer to each other. As a result, a significantly higher reach is achieved for each medium and the integration of social networks offers the opportunity of interaction with the end customer. Having this in mind, new marketing formats for the placement of advertising are possible.

Eva Schneider (Aus- und Fortbildungskanal afk tv): "I personally see trimediality as an opportunity to conceive and implement content as a cross-media project that appeals to all the senses".