BMW's refit for purpose

The famous motor company has revamped its Munich museum and added a raft of interactive elements in its product galleries

The BMW museum in Munich, Germany, has reopened after a substantial overhaul and refit. The company's 90-year history is now told in seven thematic blocks, or 'houses', totalling 25 exhibition areas that between them contain 125 exhibits in an area of 5,000m².

The museum is dominated by multimedia presentations using visitor interaction, with creative visuals to involve visitors in the BMW story. Innovative Communication Technologies (ICT), of Kohlberg, was responsible for both the hardware and the software implementation for many of the exhibits. Programming and networking were the bulk of ICT's remit.

At the heart of the museum is The Bowl, which features a large 360° projection that forms the core of this part of the exhibition. Images from 18 projectors, each with 10,000 lumens, are combined in a surround image to highlight temporary exhibitions in this area. The content moves around the visitors to help captivate the audience through a series of realtime images and animations.

To accompany the visuals, a 64-channel audio system provides the sound, and 125 individually installed loudspeakers, fed by a total of 20kW, produce an audio collage. The ICT team was also responsible for the lighting controls that run

Left and above: appearing screens give a sense of motion while detailing the history of BMW

synchronously to the projection in The Bowl. Thanks to the range of multimedia equipment in the room, the space can also be used for events – for example, parts of the projection surface can be freely selected for presentations.

The Central Space forms the hub of the second part of the building. Here visitors will find a multi-story showcase exhibit whose surfaces, consisting of LED panels behind glazing, are capable of displaying content on the entire surface in the 13m-high building. A ramp leads visitors around and through the museum's hub to all of the themed exhibition rooms.

A visitor tracking system, which was implemented with the ICT TouchVision software, follows guests during their visit. An infrared camera system records visitors and measures the number of people at predefined co-ordinates around the museum.

Depending on the number of people, the software triggers player-engines which then show films or abstract sequences. These video feeds, some of which are superimposed with interactive elements, allow the visitor to become part of a video animation as they walk past.

TouchVision controls the volume of the 210 loudspeakers in the central space. If there are a lot of people present, the sound equipment plays out at an automatically increased volume.

The chronology of BMW's history is presented using interactive a-v elements. Up to 60 visitors can simultaneously generate information about the manufacturer's history on a 10m-long multi-touch table, which receives content from 10 projectiondesign F30 projectors.

Further exhibits in this area offer auditory information in the form of 'audiobooks'. To achieve this, books are mounted as haptic (touch) interfaces on tables and the opened pages are recorded on camera. Pattern-matching software triggers the corresponding audio files for each page. The sound waves from the loudspeaker installed above the audiobook hit the reverberant surface of the book and are reflected back to the visitor.

Information on the design process is presented in the House of Design part of the museum. Visitors can step on inlays in the floor to generate auditory explanations for the exhibits in question. Sensors detect the presence of the visitor and trigger the information flow via TouchVision software. Panphonics loudspeakers mounted in the ceiling enable targeted sound to the instigator because of their precisely controlled emitting properties.

Interactive selection

Multi-touch capable 'infobars' in the House of Design, integrated like a frieze in the wall, serve as information sources for the subjects of engines and lightweight construction. Using dual soft-edge projection, content, which can be interactively selected by the visitor, is projected on to the cornice of the frieze. An additional media element is a large format, seamless triple projection using projectiondesign F30 projectors which gives information about the aerodynamics of earlier BMW models.

In the House of Motor Sport area, 'appearing screens' set the scene. Several rows of light boxes mounted in the exhibition building show fixed-images, such as those on the theme of touring cars. A monitor is hidden behind one of the light boxes in the row which is triggered by a sensor when a visitor is detected and then displays film material of the scenery. A large size projection complements the movie material. At certain intervals, the theme room closes and visitors are provided with a 64-channel audio system in addition to the images, to replicate the feeling of being on a racetrack. The synchronisation of the audio experience with the light boxes and the projection is achieved with an ICT media controller.

The House of the Series features a large infobar with six projectors, similar to the smaller installation in the House of Technology, and serves as a presentation medium for the BMW 7 series. Visitors can call up information as if they were standing in front of an open showroom window and view the seven models positioned behind it. The engine sound of the BMW M models can be experienced at another exhibit where visitors hear the sound of the BMW M through headphones.

To give the operators of the BMW museum fast and mobile access to the a-v technology, a system was created, based on ControlVision and TouchVision, which controls and monitors the entire exhibition spaces and building technology via an interactive HTML interface.

The integrated web server can control all the sensor technology of the exhibits, with more than 120 fully automatic feed systems, bulb running times and the condition of every projector in the museum. Every loudspeaker and audio server channel is controlled and all functions administered by the museum via LON-Bus, such as the ICT programmed light scenes, mood lighting and power circuits, are switched and centrally monitored. ■

KEY FACTS

German car manufacturer BMW has substantially revamped its Munich museum, adding a whole range of a-v interactivity over 25 exhibition areas and 125 exhibits. BMW has invested in large-scale audio, interactive touch and projections systems to help tell the story of the company's 90-year history.

* www.ict.de
* www.bmw.com