By the end of 2011, the majority of the world’s cinemas had converted to digital – so, there can be no doubt in anyone’s mind that the future of cinema is digital. And while most of the focus has been on the (financial) challenges associated with the Digital Cinema conversion, the time has come to really look at the paradigm shift it enables, creating a fantastic opportunity for a new audience-centric exhibition model.
Focus on the audience

The cinema of the future can be a true multimedia entertainment, business and educational center, and an important local cultural hub. It has some of the advantages enjoyed by sports and live music event formats, with the value of social experience as an important dimension. Many exhibitors have experimented with alternative content, but we have only been scratching the surface...

Really getting to know your customers will be key in realizing this new audience-centric exhibition model. We could easily devote a whole article to this exciting topic, and there are some great examples from other industries that we could learn from. The main focus of this article, however, is on some of the technology enablers of the cinema of the future. It’s all about creating a premium immersive experience!

Back in 1955, Morton Heilig wrote an article about “the cinema of the future” in which he foresaw the same immersive experience: “Open your eyes, listen, smell and feel – sense the world in all its magnificent colors, depth and sounds – this is the cinema of the future.”

Cinema’s future is... bright?

Yes it is! But it’s more than that. Historically, audiences have been drawn to the cinema by the large-screen movie experience. But, as few of us have room in our house to project an 80-foot image and share it with 500 friends, this large-screen experience will remain central to the cinema of the future – but it will need to be taken to the next level, and cinema will no longer be about movies alone.

As mentioned above, creating a premium immersive experience is key. In the large-screen environment that is so typical for cinema, image (projection) quality is a critical aspect of that, and many image quality parameters have an impact. Sure, ‘4K’ has received a lot of attention the past few years – the fact that resolution is higher when you have 4 times as many pixels available is undeniable. But it’s important to understand that resolution is only one piece of the image quality puzzle. First of all, in a darkened environment such as a cinema auditorium, the human eye is much more sensitive to contrast (‘true black’) and color (deep saturation). Furthermore, in a setup where content is moving across a large screen and your head is moving to follow the on-screen action, high temporal resolution (High Frame Rates) is crucial.

The announcement of HFR 3D features by James Cameron & Peter Jackson has drawn a lot of attention to this piece of the puzzle. And of course, brightness, brightness, brightness – as the ongoing controversy over dark 3D images amply demonstrates. A crisp and bright picture on the cinema screen is enabled by a sophisticated combination of technologies that make digital cinema projectors state-of-the-art devices.

3D cinema sound

After image quality, the next logical element to focus on in creating that premium, immersive experience would be audio. In his 1955 article, Morton Heilig stated: “With the addition of sound, cinema stepped into the camp of combined arts. Cinema was no longer just a visual art, but had set itself the task of expressing in all its variety and vitality the full consciousness of man.”

In contrast to the digital cinema revolution in the visual experience, cinema audio has evolved very slowly. In fact, other than adding a few more speakers to surround the audience with sound, the past 20 years or so have not really brought any significant innovations that can take us to the next level in cinema audio. Fortunately, 3D audio – the next logical step toward the ultimate
immersive cinema experience – is now set to change all this.

Sound is related to emotion – and it’s clear that an immersive sound field creates more of an emotional response in the audience than image alone. Even when environmental sounds are heard unconsciously, they can have an impact on our emotional attitude and behavior. People feel connected with the environment through sound – and the more natural the sound, the closer the connection. Audio in 3D can deliver this by expanding the 2D-plane of surround sound into a fully natural 3D sound experience – making the whole experience more natural, and thus immersive.

**Sound experience**

The cinema of the future needs to extend the large-screen image experience with an enhanced sound experience. A crucial step in realizing 3D audio for the movie-going audience is finding a format that is compatible with the well-developed audio ecosystem in movie-making and cinema exhibition. From capturing the audio on the set, to mixing the audio in the studio, to playing back the audio in the theater... in a transition phase, people are hesitant to support a technological revolution unless it provides the safety net of backward compatibility.

This technology exists in Auro 11.1, an innovative new audio system that is making waves in the industry. Based on the expertise of one of Europe’s leading sound studios, combined with Barco’s innovative track record in digital cinema, Auro 11.1 offers the most viable solution for next-generation cinema sound. Auro 11.1 differentiates itself from other sound systems by adding height information for a more natural sound, while maintaining DCI compliance and compatibility with existing standards.

**Premium cinema experience**

As it houses the large-screen immersive experience, the auditorium will remain the cornerstone of the cinema of the future. However, the audience of the future will expect more. Future generations will expect to be informed, connected and entertained 24/7, and they’ll have many things competing for their attention. For cinema owners, it will no longer suffice for the show to start when the lights go down. The experience will start the moment the audience walks through your door (for those creative futurists among you: the moment they drive into the parking lot). Why not expand the cinema experience to new locations (parking lot, lobby, theater bar, corridors...) and times (pre-show, post-show, weekday, morning, evening...)? After all, two of a cinema theater’s greatest assets are its location and its infrastructure. Which provide opportunities to reach out to your audience, to make them aware of upcoming releases, and to learn more about them.

**Alternative content**

There are some quick wins to be had in creating this extended experience in the cinema of the future. Theaters worldwide have already been expanding from feature-film-only to alternative content. The success of these events can be maximized when the experience around the content is adapted. There’s no reason why going to see a sports game on a large cinema screen shouldn’t be more like experiencing it live. What keeps you from letting your audience tailgate in your parking lot?

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**Sound is 50% of the movie experience.**

George Lucas
In-theater infotainment

The days when the cinema canvas was the only screen in the building are long gone. Digital signage is opening up the rest of the building (lobby, corridors, facades...) to visualize content and entertain and inform your audience. But it doesn’t stop there: the massive success of smart phones means that the majority of your audience is now walking into your building with a connected (= accessible) screen. There is no reason why you cannot use all of these screens to distribute your trailers, announcements, messaging, coupons... – and grow the cinema-going experience for your audience. And that’s only one-way visualization or communication. Why not let your audience truly participate in the experience? This might be as simple as one-off voting on a future release; or it might be as ambitious as following the moviegoing profile of all of your customers.

Those are just a few basic examples. We can come up with some really creative solutions, if we put our mind to it. No doubt, ten years from now, we’ll walk into a cinema and experience things we haven’t even started thinking about.

How far in the future is all this?

The digitization of cinema has been going on for more than a decade now. In that time, we have passed the 50% point of no return. There is no doubt that we’ll reach a 100% digitization in the next few years. At first, the opportunities offered by digitization grew screen-by-screen. Only now are exhibitors looking at this revolution on an enterprise level. The opportunity for immersion and integration as we have described the cinema of the future is now! We know where we want to go, and the industry momentum is there... but do we have the tools to kick it off?

We believe that many of the buildings are already in place to start this move to the future. All types of content are available in digital format, equipment costs have come down to commercially viable levels, and there’s know-how from other markets that have gone through the same cycle (e.g. digital signage and out-of-home advertising). It is now a matter of gluing the pieces of the puzzle together and making the complete picture clear. This means: opening up existing systems to interface with each other, agreeing on standards for information exchange, adding the ‘cockpit layer’; looking beyond cinema to wider industry trends (e.g. smart phone adoption and use), and so on. And this is possible today: Barco has access to all of the building blocks and is working on integration and interfacing.

This also means that the cinema of the future is not defined by a single technology. Some people call high frame rates (HFR) the future of cinema. We believe that HFR is just one of the building blocks. As long as nobody connects the dots, the future will remain fuzzy.

Where do you want to go?

To sum up, the cinema of the future will still have the same attractive features that have drawn audiences to theaters for 100 years: high-quality movies on the large screen, packaged as an enjoyable outing for all moviegoers. But this experience is set to expand in all dimensions and evolve into a truly premium immersive experience – including continuous interaction and ubiquitous content starting the moment the cinemagoers arrive at the cinema.

Let the ideas flow!

Tim Sinnaeve
Tom Bert

About the authors

Tim Sinnaeve is Market Director Digital Cinema at Barco.
Tom Bert is Product Marketing Manager Digital Cinema at Barco.

References


Epilogue

1 Morton Heilig also predicted that odors would be broken down into basic qualities the same way that colors are composed of primaries. Their intensity would be recorded on magnetic tape – which would drive their release into the theater’s air-conditioning system!