
IMAX StreamSmart™ | ON-AIR
Saving bits is a beautiful thing.
Your workflow. Your rules.
Now with dynamic optimization.
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Discover how to save millions in distribution costs by reducing bitrate while protecting video quality.

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IMAX StreamSmart™ | ON-AIR

What if you could maximize efficiency by 15% to 25%?

Dynamic optimization.

IMAX StreamSmart™ | ON-AIR, live video streaming optimization software, tackles the challenge of controlling delivery costs faced by many streaming services. Using the existing encoding and packaging workflow and leveraging patented IMAX VisionScience™, this software uses a manifest manipulation approach to dynamically optimize bitrate to protect video quality and reduce stream bandwidth. This ensures the same viewer experience at significantly lower bitrates.

Improves existing workflows.

This software optimizes bitrate using a quality-measurement approach that quantifies video quality accurately in a way other methods cannot. The technology analyzes every video segment from a group of ABR profiles and selects the lowest bitrate segments that maintain the same video quality, guaranteeing an optimal viewer experience while maximizing bitrate savings.

Guaranteed ROI.

With IMAX StreamSmart | ON-AIR, distribution costs can be reduced by 15% to 25% without any distinguishable difference in video quality. The solution integrates easily into existing infrastructures, and the price is based on a fraction of the cost savings, making the solution cost-effective and efficient.

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Save millions with pixel efficiency.

Integrates seamlessly

The software uses the existing encoding and packaging workflow and employs a manifest manipulation approach to optimize bitrate, minimizing disruption to infrastructure and tech stack.

Saves more bits

IMAX VisionScience technology measures quality based on human perception, driving more savings by eliminating bits that are indistinguishable to the human eye.

Improves viewer engagement

The product enables faster start time and lower buffer rate so video streaming platforms can scale the number of viewers without rearchitecting the content delivery workflow.

Pays for itself

No budget? No problem. The simplified licensing model pricing is guaranteed to represent a percentage of bandwidth savings, ensuring a consistent financial ROI.

Protects quality first

IMAX StreamSmart | ON-AIR employs the IMAX ViewerScore (XVS™), a perceptual quality metric, to prioritize quality. The bitrate is only lowered when it can guarantee indistinguishable video quality.

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Protect picture quality like never before.



Stop sending pixels your viewers can’t see.

Start saving costly bits.

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An unparalleled mirror of the human visual system.

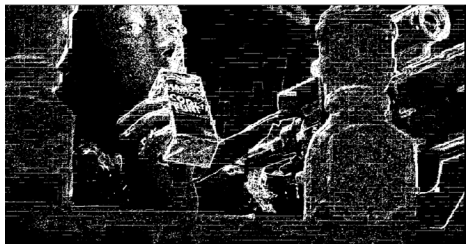
Software engineered to see pixels as people do.



The human perspective
See the original image as humans.
Notice where your eyes focus.



Spot the degradation
See the pixelated, degraded image.
It's easy to notice for us humans.



Focus mapping
IMAX software illuminates and maps human attention.
The brighter the area, the more it indicates where humans focus.



Degradation mapping
IMAX software identifies and maps the degradation like humans.
The darker the area, the greater the degradation.

The patented and award-winning IMAX VisionScience technology successfully maps the intricacies of the human visual system, producing an unparalleled measure of perceptual quality.

This technology incorporates a unique set of quality components to produce a single score, the IMAX ViewerScore (XVS), which boasts over 90% correlation to audience perception as measured by Mean Opinion Score (MOS).

Unlike other metrics, XVS can detect quality differences that were previously undetectable. Additionally, XVS offers both no-reference and full-reference metrics, and is suitable for all content types, including:

- Content complexities (even scene-by-scene variations)
- Frame rates
- Resolutions
- Codecs (including AVC, HEVC and AV1)
- Dynamic ranges (HDR, SDR)
- Devices (from handhelds to the biggest and best TVs)

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Unlock the Science of Seeing.®

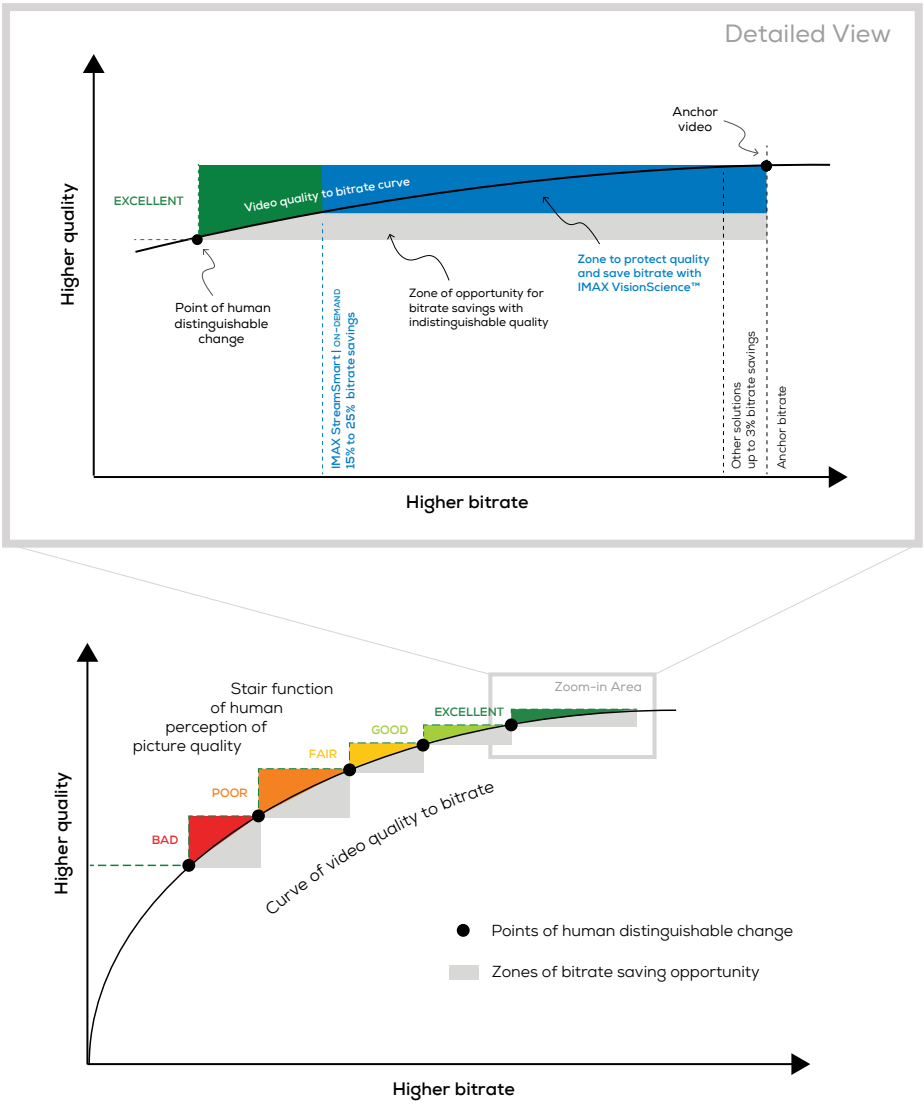
Knows exactly how low you can go by device.

While other quality metrics are available, the IMAX ViewerScore stands out for its unique ability to accurately correlate with human vision. This algorithm precisely determines the extent to which bitrate can be reduced without compromising quality.

The technology operates on the understanding that humans perceive changes in quality in distinct 'steps', creating zones where quality loss goes unnoticed by the human eye. This insight provides a valuable opportunity to decrease bits in a way that remains indistinguishable to humans.

The software is designed to detect and capitalize on these opportunities for maximum bitrate savings. Because of this, the metric provides an unparalleled level of certainty. As compression increases and bandwidth decreases, the viewer's experience remains unharmed. This assurance allows for optimization of file size without risk.

With IMAX VisionScience, more savings are delivered than other solutions, providing peace of mind and the ability to optimize file size further without risking quality.



All the factors. One directly comparable score.

The IMAX ViewerScore quantifies picture quality as people do.

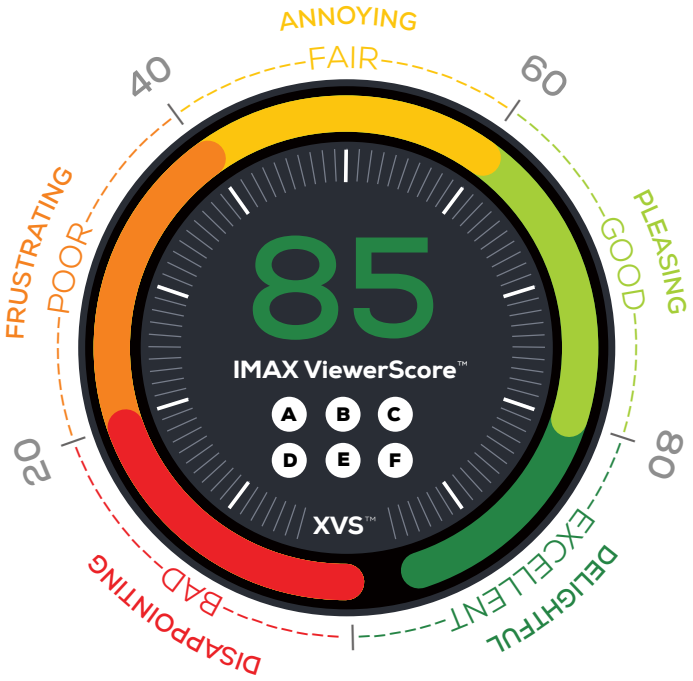
The *resolutionary*™ software analyzes pixels like a pro and operates at the speed of streaming.

XVS provides a unified score across all devices, resolutions, dynamic ranges, and content types.

Accurate
Correlates ›90% to how humans would rate picture quality.

Complete
One score across all devices, content types and formats including 4K, 60 fps, and HDR.

Fast
Real-time speed with low compute– 10x faster than anything else.



Automated pixel watching offers unique insights into the precise quality of the stream and the factors influencing it to enable optimal business decisions.

A Video Content
- Dynamic range
- Resolution
- Frame rate
- Color space
- Scan format

B Human Visual System
- Alignment across content
- Linear scale
- Masking behaviors
- Impairment visibility
- Psychovisual behaviors
- Spatiotemporal attention
- Studio + expert + typical viewers

C Device & Viewing
- Any client device
- Device scaling
- Display brightness
- Display contrast
- Viewing distance
- Viewing angle
- Display area
- Surround brightness
- Ambient environment

D Source Analysis
- Full-reference
- Single-ended no-reference
- Deep learning-based
- Pixel based
- Banding detection
- Macroblocking detection
- Supports all codecs
- Full range of quality

E Encoder Performance
- ABR ladder analysis
- Quality maps
- Supports all codecs
- Full range of quality
- Temporal alignment
- Color quality map
- Tone mapping

F Playback
- Rebuffering/stalling
- Profile switching
- Startup delay
- Score alignment
- Manifest inspection
- Native resolution detection
- Player colocation or HDMI

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Powerful optimization software for existing encoding and packaging workflows.

Streamlined deployment. Minimal disruption.

IMAX StreamSmart | ON-AIR is dynamic bitrate optimization software that uses the existing encoding and packaging workflow for minimal disruption to infrastructure and tech stack.

- Employs manifest manipulation and is therefore codec, encoder, and configuration agnostic..
- Automates analysis and optimization, saving time and effort.
- Enhances existing optimization efforts for additional savings.
- Supports advanced formats up to UHD including AVC, HEVC and HDR workflows, including HDR10, HLG.
- Operates seamlessly in any environment, be it on-premises, private, or public cloud infrastructure.

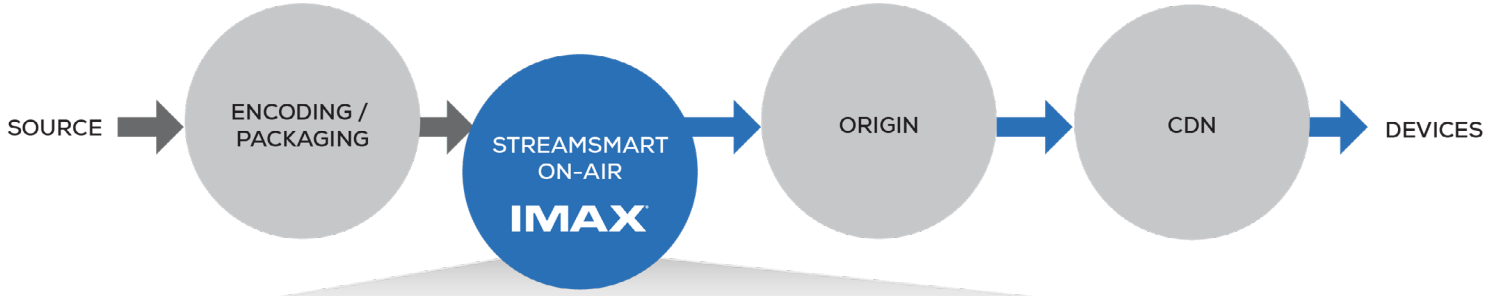
Efficiently save bits without compromise.

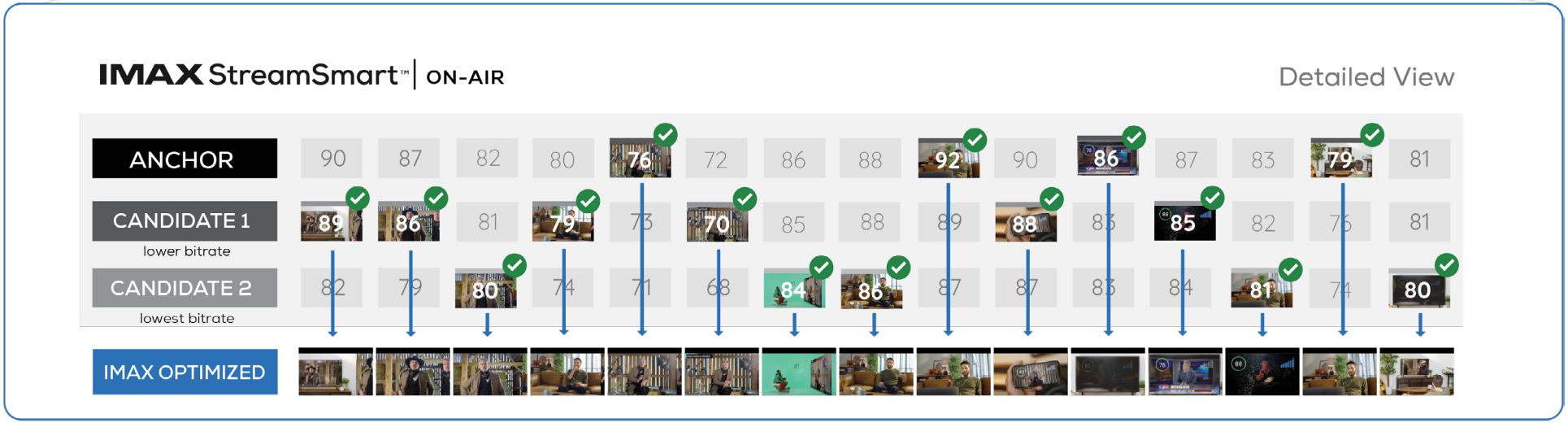
IMAX's VisionScience technology prioritizes video quality by reducing the bitrate only when the video quality remains indistinguishable.

The result is an average 15% to 25% bandwidth savings, representing potential millions in bandwidth savings across channels.

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Existing workflow. Now with dynamic optimization.





1. We work with the current top profile plus 2 lower bitrate renditions:
   - ANCHOR: current top encoding profile
   - CANDIDATES: 2 renditions are generated in parallel using IMAX's Advanced AI/ML.

2. Each rendition is split into 2-to 5-second segments, that are scored using IMAX ViewerScore (XVS).

3. StreamSmart dynamically selects the best segment (the targeted equivalent XVS at the lowest bitrate) and creates a new optimized manifest file, which is sent to the origin.

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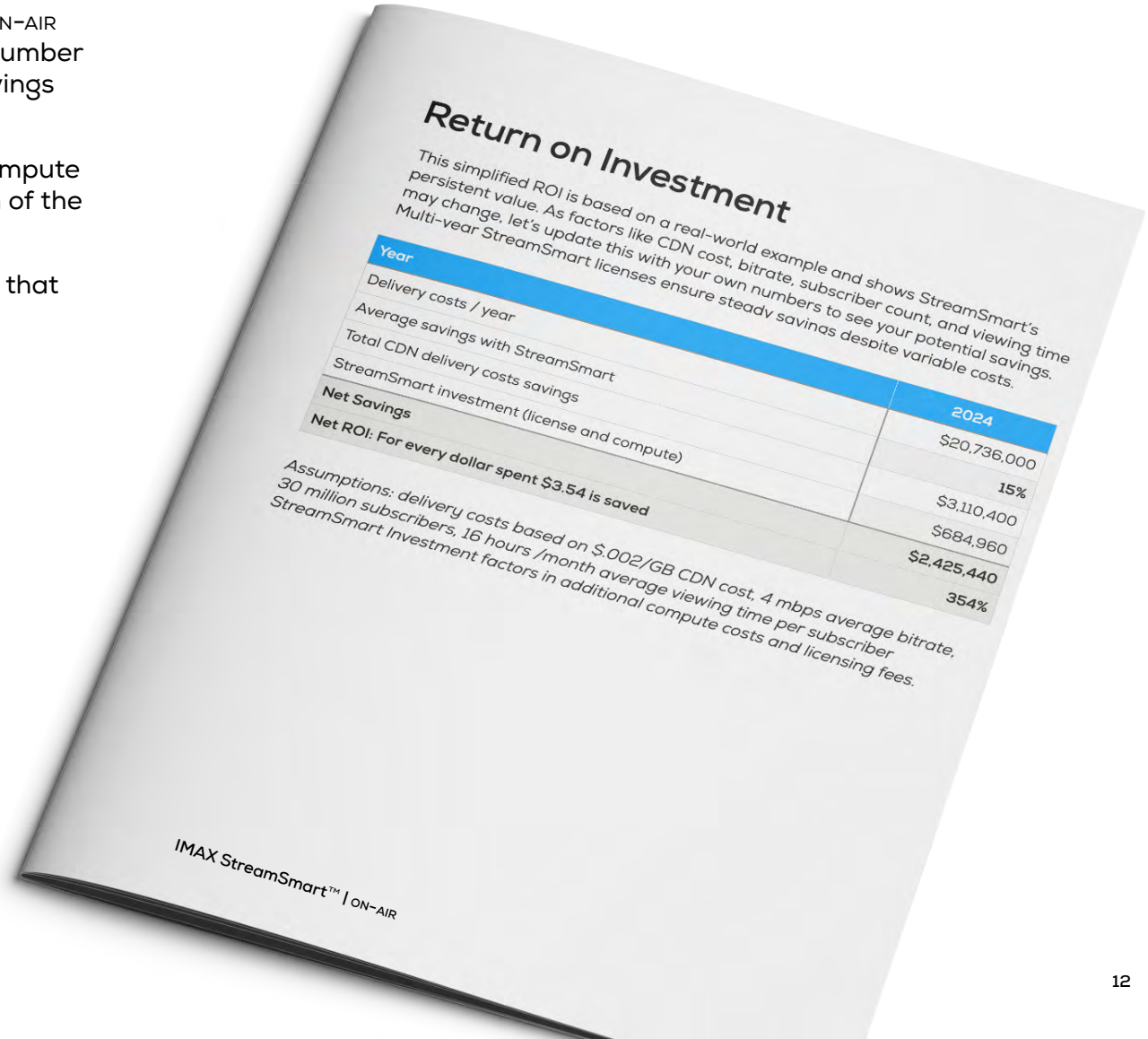
Guaranteed ROI: Now that's a balance sheet.

Risk-free savings.

The pricing structure for IMAX StreamSmart | ON-AIR includes a license cost and correlates with the number of hours processed and the average annual savings percentage.

While running software may incur additional compute costs, these generally constitute a small portion of the overall savings.

The advantage of IMAX StreamSmart | ON-AIR is that expenditure never exceeds savings, rendering it a completely risk-free investment.



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