

F R O S T & S U L L I V A N

2024 CUSTOMER VALUE LEADER

*IN THE EUROPEAN
IN-VEHICLE
ENTERTAINMENT
INDUSTRY*

3SS

F R O S T & S U L L I V A N

BEST
2024 PRACTICES
AWARD

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. 3SS excels in many of the criteria in the in-vehicle entertainment space.

AWARD CRITERIA	
<i>Business Impact</i>	<i>Customer Impact</i>
Financial Performance	Price/Performance Value
Customer Acquisition	Customer Purchase Experience
Operational Efficiency	Customer Ownership Experience
Growth Potential	Customer Service Experience
Human Capital	Brand Equity

A Market Snapshot

Frost & Sullivan’s independent research highlights technological advancements in Europe’s automotive in-vehicle display industry, with many original equipment manufacturers (OEMs) introducing advanced infotainment systems at every new model launch. With in-car entertainment emerging as a promising recurring revenue stream for OEMs, they are looking at larger and dual/multiple screens as key differentiators. Consumers prioritize comfort and convenience thus, the demand for cars with cutting-edge in-vehicle display features and connected technologies has surged. Electric vehicles’ (EVs) accelerated adoption further propels the integration of innovative capabilities into most models. Furthermore, the consumer inclination towards enhanced and diverse in-car entertainment functionalities and services is rising. Affordable and seamless connectivity are also among the primary market growth drivers. Additionally, customers are increasingly interacting with entertainment applications (apps), payment gateways, and online shopping platforms on larger screens, smartphones, and tablets. Frost & Sullivan’s research analysts emphasize that enriched in-car experiences present avenues for industry growth as modern buyers predominantly belong to a tech-savvy generation seeking distinctive features. OEMs and automakers can make their products more appealing through upgraded capabilities (e.g., cloud-based gaming and streaming services, access to music and movies, live sports and news, and educational content).¹

¹ Growth Opportunities in the European Passenger Vehicle In-vehicle Display Industry (Frost & Sullivan, May 2024)

3SS: User-centric, Visionary, and Technology-driven

3SS (3 Screen Solutions) provides a game-changing entertainment ecosystem with expertise in solution architecture, software engineering, system integration, and user interface (UI) / user experience (UX) design innovation. The company has established a robust European footprint with headquarters in Stuttgart, Germany, and development center operations across Romania, Moldova, and Ukraine. Its pioneering platform, 3Ready, boasts a customer base of pay-TV providers, including telcos and network operators, with an aggregated reach of 68 million users. The company has delivered over 400 entertainment projects and has more than 120 partners.² 3SS' holistic solution empowers car makers to integrate video-streaming, gaming, and productivity apps in one place, delivering a complete end-user experience. 3SS' impressive network includes many notable entertainment providers (including Swisscom, Proximus, A1 Telekom Austria Group, 4iG, Allente, Altibox, ORS Group, Tele2, TELUS Canada, Claro Brazil, Google, Elisa, Joyn, Vodafone, and RTL Group). The company has deployments in 51 markets, signifying wide applicability. Having a vast partner, customer, and facilities portfolio highlights 3SS' excellence, reach, and impact.

Harnessing 15 years of market expertise and a content-centric approach, 3SS revolutionizes the automotive industry with over 50 content and 110 ecosystem partners, more than 60 Android and 200

“Accentuating continuous technological advancement and an entertainment-as-a-service model, 3SS delivers next-level convenience and fuels premium entertainment services with 3Ready Automotive. The one-stop shop demonstrates the company’s efforts toward minimizing time-to-content with a single access point for all apps and solutions.”

- Iqra Azam
Best Practices Research Analyst

video experts, and seven solid projects.³ The company has many content partnerships (technically pre-integrated or currently in implementation) with multiple platforms (e.g., YouTube, Fubo, ARD, Deutsche Welle, Horizon Sports, Motorvision, Insight TV, Minute Shorts, Twist Tales, and many more). 3SS' outstanding partnership portfolio entails numerous renowned brands, including Amazon, Harman, Forvia Faurecia, Bosch, TomTom, Gamestream, AirConsole, Vivaldi, Cinemo, P3, 4screen, and Paradox Cat. The company's rich stakeholder ecosystem fortifies its competitive edge, highlighting a firm market foothold.

The company's success stems from its ability to identify and overcome industry challenges and understand the technical and commercial complexities that video service providers face while adopting growth drivers and trends, demonstrating a future-oriented approach. With digital and mobility transformations, consumers' patterns of using and interacting with their vehicles have changed. Vehicles are progressively becoming software-centric. Therefore, car companies no longer only focus on selling vehicles with higher efficiency; they want to offer technology-driven products and engage in better customer relations while leveraging better revenue opportunities through digital offerings. 3SS highlights a rapid and broad interest in in-car entertainment as the industry offers considerable growth avenues for OEMs. The company focuses on optimizing in-

² Frost & Sullivan's Interview with 3SS (July 2024)

³ Ibid.

vehicle time with smart content recommendations, allowing users to engage with screens, e.g., while charging their cars and providing entertainment for front and rear passengers.

Although third-party video apps and built-in browsers support video consumption, car makers require a solution to supervise and monetize the end-user experience. Identifying this gap, 3SS offers its OEM solution, which the car manufacturers fully control. The company capitalizes on OEMs' willingness to pay for an all-inclusive connected services portfolio with integrated video streaming access. Only dedicated OEM spaces enable in-car communication for unique user engagement, allowing automotive companies to share promotional content and messages with car owners. The company illustrates unparalleled customer value leadership by empowering its clients with revenue-generating software.

3Ready: Redefining, Personalizing, and Simplifying In-vehicle Entertainment

Accentuating continuous technological advancement and an entertainment-as-a-service model, 3SS delivers next-level convenience and fuels premium entertainment services with 3Ready Automotive. The one-stop shop demonstrates the company's efforts toward minimizing time-to-content with a single access point for all apps and solutions. 3SS calls this approach the 'pre-app experience,' tailored to car manufacturers' brands and preferences. It eliminates reliance on third-party apps while enabling them (if available). Additionally, the company has projected that OEMs can secure an average yearly revenue of over \$62 per vehicle with the 3Ready platform.⁴



⁴ Ibid.

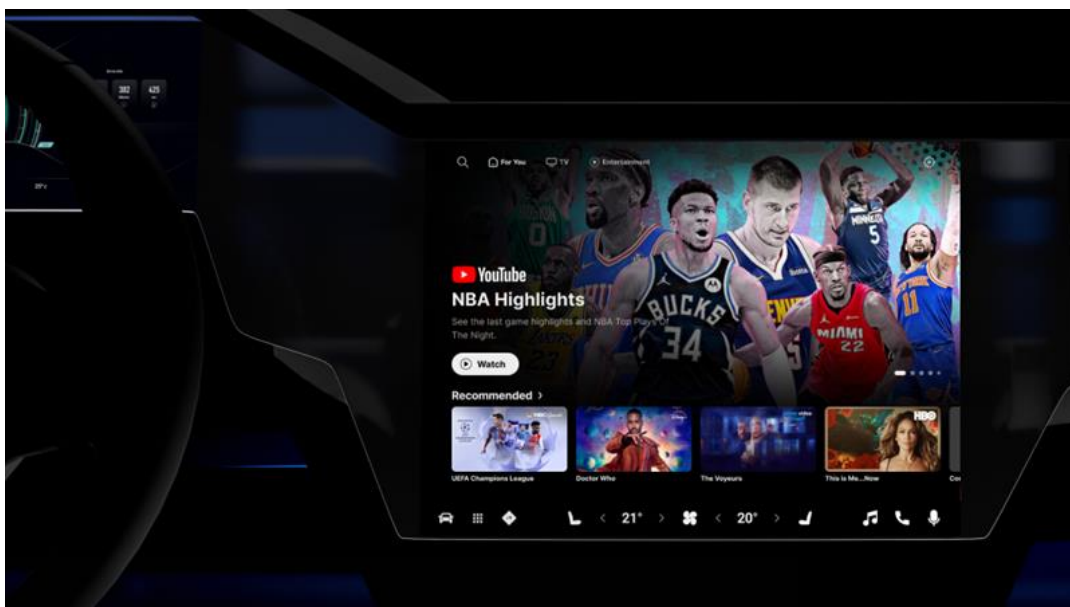
Following a one-time adaptation, 3Ready Automotive delivers a customized brand experience to the user. This adaptation is made once to accommodate different vehicle operating systems (OS), car models, and respective screen sizes. This allows support for multiple brands and regions while substantially lowering development, operation, and maintenance costs.

With 3Ready Automotive's existing tech stack (including Android Automotive OS, Android Open Source Project [AOSP], Linux, and QNX), end users get an entirely personalized and connected experience with their vehicles and brands. Moreover, 3SS eliminates the hassle of entertainment search by placing the content in front of the consumers at the right time. This is known as a content-centric approach, as it surfaces the content in front of the user instead of only the service provider's app logos.

3SS' integrated content management system is a web-based, user-friendly, and tailored Control Center that facilitates valuable real-time analytics and usage behavior insights while eliminating the pain points of inflexible templates, complex code changes, and long release cycles. The system also accommodates real-time control (add, edit, and publish with one click) and advanced content application programming interfaces. The 3Ready Control Center sets 3SS apart from competitors by giving every customer a unique, curated experience.

3SS has made its solution more appealing with multiple offerings, including monetization, user-centric UX, data and analytics, roadmap, and content services. Monetization services amplify 3SS' unique value proposition with advertising (ad) revenues through the company's partners, helping OEMs initiate active income channels with ad-tier programs and targeted ads. Notably, 3Ready enables 11 different revenue streams for car manufacturers.

3SS understands that for entertainment spaces' regular use, the UX must be enticing with personalized content aligning with users' priorities and locations. As part of its UX Services, 3SS can perform various tasks for car makers, including adapting the UI to changed brand design, generating target groups and



assigning matching content, creating promotional content, launching marketing campaigns, and curating content.

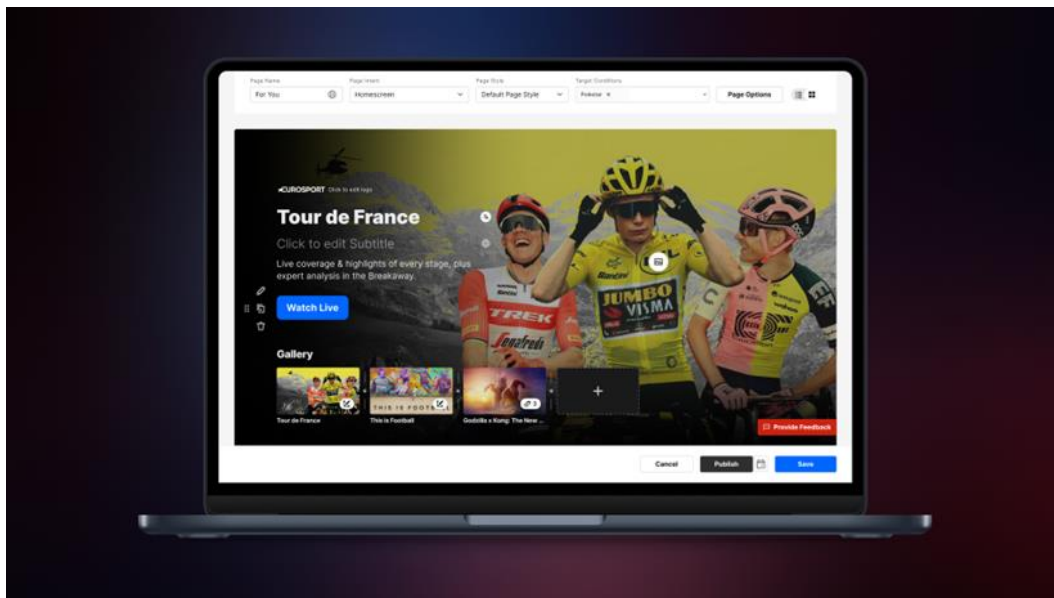
3SS notes limited data on in-car entertainment as it is a developing market. Therefore, many decisions are based on assumptions. To bridge the gap, the company employs analytics to help OEMs and content providers improve their offerings with actionable insights. Furthermore, 3SS reduces data consumption-related costs with adaptive bitrate streaming through image and feed optimization and the audio-only mode.

As part of its roadmap services, the company regularly enhances 3Ready's framework to deliver the latest features, functionalities, and use cases. 3SS leverages market trends, customer workshops, feedback, and team ideas, promoting a strong sense of ownership among users while enhancing its solutions.

For an outstanding end-user experience, 3SS empowers OEMs with its rich entertainment projects portfolio. The company closely collaborates with local and global content owners to introduce their services through multiplatform devices. 3Ready allows manufacturers to create dedicated entertainment hubs with international (e.g., YouTube, Prime Video, Disney+, Max, Discovery+, Ted, and Pluto TV) and local (e.g., BBC, CNN, ARD, ZDF, Rai, TF1, RTVE, Wavve, and many more) third-party content alongside their own video and audio content (including promotional, instructional, teaching, and entertaining).

The 3Ready and 3SS service teams work 24/7 to ensure quick problem resolution, demonstrating the company's dedication to uninterrupted operations and maintenance. Combining all features, customer benefits, and services, 3Ready is the only holistic solution that empowers many capabilities within one aggregation layer managed through a single control center.

Frost & Sullivan opines that 3SS is an industry game-changer, setting new in-car entertainment standards with 3Ready Automotive. The company's comprehensive customer-centric services unified within a user-friendly platform highlight its commitment to customer convenience and success while empowering OEMs with monetization avenues.



Expanding Capabilities by Pioneering Strategic Synergies

Over the years, 3SS has established a robust use case portfolio with strategic collaborations, underscoring its solution's high value and performance.

For example, in August 2023, YouTube joined 3Ready as a content partner. YouTube selected 3SS to scale YouTube across operator and carmaker platforms. Deep integration of the YouTube Recommendation API

"Frost & Sullivan recognizes that 3SS' diverse use cases and growth-focused partnerships equip the company with the optimum resources and high-value solutions to transform the market. The company's deep-seated history of bespoke innovation helps it shape the industry's trends, proving outstanding agility and scalability."

- Iqra Azam
Best Practices Research Analyst

into 3Ready enables video service providers and carmakers to cherry-pick from the vast array of YouTube content to deliver to customers.

Video service providers, including OEMs, can offer customers YouTube playlists and event-based content. Providers can choose topic-specific content clusters grouped around areas of interest, like fitness or business, for example, pre-curated by YouTube. These can include trending content, new music, sports news, top news and music, music genres, games, and movies, among a long list of entertainment pre-qualified and curated by YouTube.

The curated content shortens users' time finding engaging content, a huge benefit for many service providers, including carmakers. Moreover, the solution works on Linux and Android, making it available to many cars since most legacy vehicles run on Linux / QNX.

In another example, in July 2023, SUPER RTL's kid-centric multiscreen entertainment service, TOGGO, and 3SS launched a first-of-its-kind kids video app for Android Automotive-based in-vehicle infotainment systems. This synergy brings an enjoyable solution (3Ready-powered) for children inside and outside. The app brings the TOGGO multiscreen entertainment platform to cars, including under-13s access to many shows, movies, and a digital radio station. This partnership enables the TOGGO app to deliver a remarkable user experience, serving different vehicles equipped with Google Automotive Services (GAS). The app is currently available for all vehicles equipped with GAS and can be downloaded via the Play Store in the DACH region (Germany, Austria, and Switzerland). Additionally, there are future expansion ideas for rear-seat entertainment; this will allow OEMs to cater to a broader automotive range.⁵

Leveraging 3Ready's Control Center, clients' editorial, content, and marketing teams can seamlessly, remotely, and in real time manage the in-car experience. They can also add new services on the fly and curate content to cater to customers' needs. 3SS has the capacity and capability to empower more content partners to join the automotive sector.

Moreover, 3SS worked with the BMW Group and Paradox Cat to implement the BMW-specific functionality and user interface for BMW's 31.3-inch Rear Seat Entertainment (BMW Theatre Screen) for the i7 and 7 series. 3SS' team combined Android technology with a premium automotive human-machine

⁵ <https://www.3ss.tv/case-studies/toggo-for-cars>

interface. Capitalizing on its Android expertise, 3SS supported BMW with a complex AOSP extension and configuration alongside custom hardware abstraction layers up to the app level.⁶

In 2024, staying aligned with its forward-looking strategy, the company teamed up with Dolby Laboratories to help carmakers offer outstanding in-car entertainment by integrating Dolby Atmos® with 3Ready for video entertainment services. The Dolby Atmos-capable 3Ready entertainment platform is deployable and scalable across Android Automotive OS, Linux, QNX, and AOSP. Harnessing Dolby Atmos' capabilities, 3Ready Automotive offers content-centric discovery and playback from Dolby-enabled content partners.⁷

Similarly, in June 2024, 3SS and Netherlands-based TomTom announced a partnership and technical pre-integration of their platforms, making 3Ready operational on the latter's advanced digital cockpit solution. With the two technologies merging, vehicle manufacturers can monetize the cockpit's entertainment service with better experiences, quicker time to market, reduced costs, and low technology risk.

“3Ready Automotive is the ideal complement to the TomTom Digital Cockpit SDK for next-level entertainment experiences. The flexibility and diversity of 3Ready Automotive enables OEMs to provide customers with highly engaging entertainment that transforms the enjoyment of any car journey.”⁸

- Lyle Baumgarten, Product Manager, Digital Cockpit SDK at TomTom

Beyond innovation, 3SS understands the significance of having diligent experts to sustain excellence, revolutionize in-car entertainment, and contribute to automotive technology's future. Therefore, in March 2024, the company appointed Robert Glas as its Director of Automotive Technology. Robert Glas' longstanding expertise and pioneering work in the automotive and entertainment sectors bolsters 3SS' market position. Besides him, Product Manager Tomasz Dzikowski, with his history at a global car manufacturer in-vehicle infotainment department, and Felix Walter, Head of Automotive at 3SS, assure deep understanding of markets and customers' needs.

Frost & Sullivan recognizes that 3SS' diverse use cases and growth-focused partnerships equip the company with the optimum resources and high-value solutions to transform the market. The company's deep-seated history of bespoke innovation helps it shape the industry's trends, proving outstanding agility and scalability.

⁶ <https://www.3ss.tv/case-studies/bmw-theatre-screen>

⁷ <https://www.3ss.tv/news/3ss-and-dolby-team-up-to-enable-carmakers-to-differentiate-with-immersive-in-car-entertainment>

⁸ <https://www.3ss.tv/news/3ss-and-tomtom-partner-to-bring-new-revenue-opportunities-to-carmakers-with-3ready-in-vehicle-entertainment-platform>

Conclusion

Leveraging 15 years of market knowledge, collaborations, and innovations, 3SS stands out in Europe's in-vehicle entertainment and automotive industries with its visionary platform, 3Ready. The company's robust infrastructure, entailing a partners' network, expansive user base, rich project portfolio, and seasoned experts, enables it to meet customers' shifting needs and contribute to the market's sustained growth. Emphasizing an entertainment-as-a-service model, 3Ready is a one-stop-shop integrating video streaming, gaming, and productivity applications, empowering sophisticated in-car user experiences while helping vehicle manufacturers create revenue streams through monetization services. 3SS' long list of successful use cases and growth-driven collaborations testify to its market-preparedness and commitment to customer success.

For its strong overall performance, 3SS is recognized with Frost & Sullivan's 2024 European Customer Value Leadership Award in the in-vehicle entertainment industry.

****All product images have been provided courtesy of 3SS****

What You Need to Know about the Customer Value Leadership Recognition

Frost & Sullivan's Customer Value Leadership Award recognizes the company that offers products or services customers find superior for the overall price, performance, and quality.

Best Practices Award Analysis

For the Customer Value Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at <http://www.frost.com>.

The Growth Pipeline Engine™

Frost & Sullivan’s proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.

[Learn more.](#)

Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

