Executive Summary

Industry-changing technology from Cinarra Systems allows digital advertisers and mobile network operators to work together seamlessly using Cinarra's next-generation location-based technology to greatly improve digital ad campaign performance without compromising consumer privacy.

Mobile web usage has recently surpassed 25% of total web traffic worldwide, and over 35% in Asia[i], making mobile an increasingly important channel for marketers to reach consumers. To date, mobile advertising has been limited in its effectiveness due to the unique constraints of advertising on mobile devices. These limitations include the lack of high-quality, real-time location data, as well as mobile consumer interest segments for ad targeting. There are also challenges in measuring and attributing mobile conversion events. These constraints have resulted in lower mobile conversion rates in comparison to those seen in desktop-based advertising.

Mobile advertising effectiveness and performance can be greatly improved with better real-time device location data and richer venue information. Improvements in these areas open new possibilities for ad targeting, such as through the creation of non-precise venue-based interest segments, which provide a physical world construct from which advertisers can derive consumer interests based on their physical venue visits. This method is similar to current digital advertising practices of deriving consumer interest from website visits, but reinvented for the mobile environment.

The source of these targeting capabilities is a significantly underleveraged asset – **mobile operator data**. To date, operators' data assets have not been effectively utilized for mobile advertising, primarily due to the complexity involved in integrating mobile networks with large-scale advertising systems in a manner that preserves subscribers' privacy.

Cinarra Systems has developed a unique technology solution that addresses these issues, allowing advertisers and mobile operators to collaborate in ways previously not possible. Through use of anonymized location, demographic, and consumer interest segment data, Cinarra's Real-Time Recommendation (RTR) technology allows for better targeted advertising in large scale Real-Time Bidding (RTB) ad exchanges. Cinarra's RTR technology provides ad recommendations based on inferred interests and real-time location. This highly efficient targeting decreases ad spam and tailors messages for consumers that are both timely and relevant.

Additionally, Cinarra's real-time analytics technology allows advertisers to 'close the mobile advertising conversion loop' by enabling the measurement of venue visits. This capability empowers advertisers to better measure the effectiveness of their mobile ad campaigns. Most importantly for both mobile operators and advertisers, Cinarra is able to provide these ad recommendations and venue visit measurement services in a manner that fully preserves consumer privacy.

Mobile Advertising Challenges: Data & Measurement Limitations

Advertisers are forecast to spend $64.25 billion worldwide on mobile in 2015, an increase of nearly 60% over 2014, and this trajectory is expected to continue with that figure reaching $158.55 billion by 2018, when mobile ads will account for 22.3% of all global advertising spending[ii]. Unfortunately, current constraints in mobile advertising have resulted in mobile conversion rates that are only 30%[iii] of those seen in desktop-based advertising. Constrained mobile screen sizes alone do not explain the relative poorer performance of mobile ad campaigns.

Specific constraints in mobile advertising effectiveness are driven by the following factors:

- Lack of real-time or 'always on' geo-location information
- Quality of location data – using IP lookup to determine location information is often not reliable and GPS is only available where the consumer has explicitly opted in to use precise location data
- Lack of physical venue-based and geo-location consumer behavioral insights and interest segments
- Difficulties in conversion tracking and attribution, which constrains advertisers' ability to measure and optimize ad campaigns

Fortunately, mobile operators have access to continuous, high-quality, real-time subscriber location data that has the potential to solve some of these fundamental problems. Location data from mobile operator networks is of higher quality and accuracy than that derived from IP lookup; collected in real time, mobile location data is 'always on.' Additionally, operator data assets allow for not only real-time ad targeting, but also the logical shift of consumer interest segment creation from the desktop-appropriate method of website visits to the more mobile-appropriate methods of physical world venue visits. Thus, with subscriber consent to the operator, mobile location data has the potential to introduce new artifacts such as physical venues as the basis of consumer interest segment building. These factors open up new possibilities for better ad targeting. Furthermore, Cinarra's capabilities leverage mobile wireless assets to measure and attribute consumer walk-in events to target venues; this offers a new dimension for advertisers to measure and optimize their mobile advertising campaigns.

Although advertisers have been working closely with ad tech companies and platforms – such as Demand Side Platforms (DSPs) and Data Management Platforms (DMPs) – to try to tap into this valuable data, ad tech companies lack the familiarity and intimate knowledge of complex operator networks, operator data, and operator information security and consumer privacy protection requirements. Thus, rich operator data has not been made available on most modern ad buying platforms, preventing advertisers from capitalizing on its targeting benefits, and mobile operators from effectively monetizing their valuable data assets. With new technology to unite them, mobile operators and advertisers now have the potential to collaborate in new ways, enabling them to work together effectively in a manner that is scalable, economical, and respects consumer privacy, while providing significant economic benefits to both parties.

The following key characteristics are required in a solution that will bridge the unique technology and privacy needs of the complex operator environment:

Location Data
- High quality
- Real time
- Venue categorization

Targeting & Measurement
- Conversion measurements
- Attribution

Privacy Considerations
- Consumer location protection
- Operator data

Systems Integration
- Cloud-based RTB solution
- Operator data center solution
- RTR enabled

Cinarra's Integrated Advertising Solution: Real-Time Recommendations

The significant challenges present in mobile advertising today can be solved by an open, purpose-build platform that:

- Seamlessly integrates with multiple mobile operators, RTB-enabled ad exchanges, and advertising platforms such as DSPs
- Enables digital ad campaign targeting based on quality, real-time location data
- Fully manages the significant difficulty of integrating complex ad tech and mobile operator ecosystems
- Supports the mobile evolution of online-based measurement and attribution methods to physical venue walk-in events

Cinarra's open platform consists of a cloud-based Advertising Mediation Platform (AMP) that works in conjunction with Cinarra's Carrier Mobile Analytics Platform (CMAP), which is fully run by mobile operators in their own data centers. The AMP mediates integrations to RTB-enabled ad exchanges and publisher networks, working together with the CMAP to enable them to operate a location-based mobile operator Data Management Platform (DMP).

Mobile Operator DMP

Cinarra's Carrier Mobile Analytics Platform (CMAP) functions as the mobile operator's real-time location data management platform (DMP) by allowing them to monetize their data assets through RTB-enabled ad exchanges.

The AMP and CMAP work in tandem via Cinarra's Real-Time Recommendation (RTR) protocol. RTR technology ensures that the only information that leaves the operator's data center is sets of recommended ads and indices; this 'privacy-by-design' model ensures that all sensitive consumer information and valuable operator data assets remain within the operator data center at all times.

With standardized APIs for ad platform and operator network integration, digital advertising campaign management, and campaign performance reporting, Cinarra's AMP and CMAP enable mobile operator DMP functionality while allowing seamless access to web and mobile app publisher inventory at scale.

Cinarra's Advertising solutions provide real-time recommendations (RTR) with scalable integration to multiple ad exchanges, delivering enhanced Digital ad targeting capabilities.
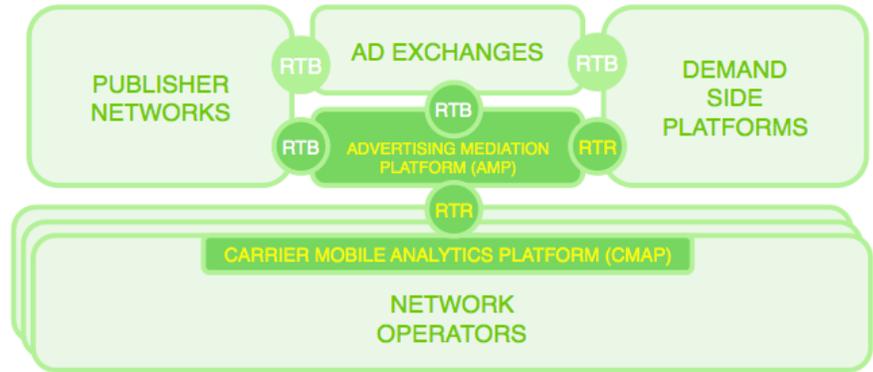
Cinarra's integrated advertising solution includes:

Advertising Mediation Platform (AMP)	Real-Time Recommendation (RTR) protocol	Operator Data Management Platform (CMAP)
• Scalable RTB exchange integration	• Real-time ad recommendations	• Real-time analytics processing
• CMAP integration	• RTB ad exchange-agnostic	• Real-time location data
• Real-time financial controls	• Subscriber privacy-preserving	• Location-based segment creation

Cinarra's Ad Management Console

With their open design, Cinarra's AMP and CMAP are capable of integrating with large-scale advertising platforms such as DSPs. In addition to external platform integration capabilities, Cinarra has its own web-based ad campaign management console, which includes the full functional capabilities of modern DSP ad consoles. Through this interface, advertisers can access the rich targeting data that is unlocked by the AMP and CMAP across mobile operator partners and multiple RTB-enabled ad exchanges[iv] to access well over 200 billion buying opportunities worldwide per month. At this scale, advertisers achieve a reach and precision that is unmatched.

Cinarra's ad console enables out-of-the-box functionality for advertisers with access to quality, real-time location targeting data; this includes proximity, context, and consumer interest segment targeting. Proximity targeting enables location-based ad targeting when devices are near a particular geographic point. Context targeting allows for simple, large-scale, real-time targeting of groups of venues or other geographical areas, depending on the time of day or week. For example, a set of venues might contextually qualify as a business district by day, but as a nightlife venue in the evening. Additionally, Cinarra provides consumer interest segment targeting based on previous venue visits.

Cinarra's ad targeting capabilities are summarized here with examples below:

Targeting Parameter	Description	Example
Real-Time Location	Real-time targeting of consumers within close physical proximity to a venue or geographic location	500m proximity targeting from a coffee shop
Contexts	Real-time targeting of consumers near particular types of venues over wide geographic areas	Nightlife context (restaurants, clubs) in a city district area
Interest Segments	Targeting of consumers based on derived interests based on the types of venues or city districts that they visit	Frequent travelers, golfers

Real-Time Location Targeting

A 33-year-old woman exits Akasaka-mitsuke train station in Tokyo and approaches a venue promoting a product. This particular product is specifically targeted to women between the ages of 20 to 39. She will be shown display advertisements for this promoted product as she approaches within 500m of the venue selling it.

Real-Time Context Targeting

The same woman spending the afternoon in the Shinjuku and Shibuya districts of Tokyo will be shown display ads for a chain of sushi restaurants offering promotions at all of their venues in these districts. The promotions are targeted to men and women of all ages, but are only to be shown during lunchtime hours.
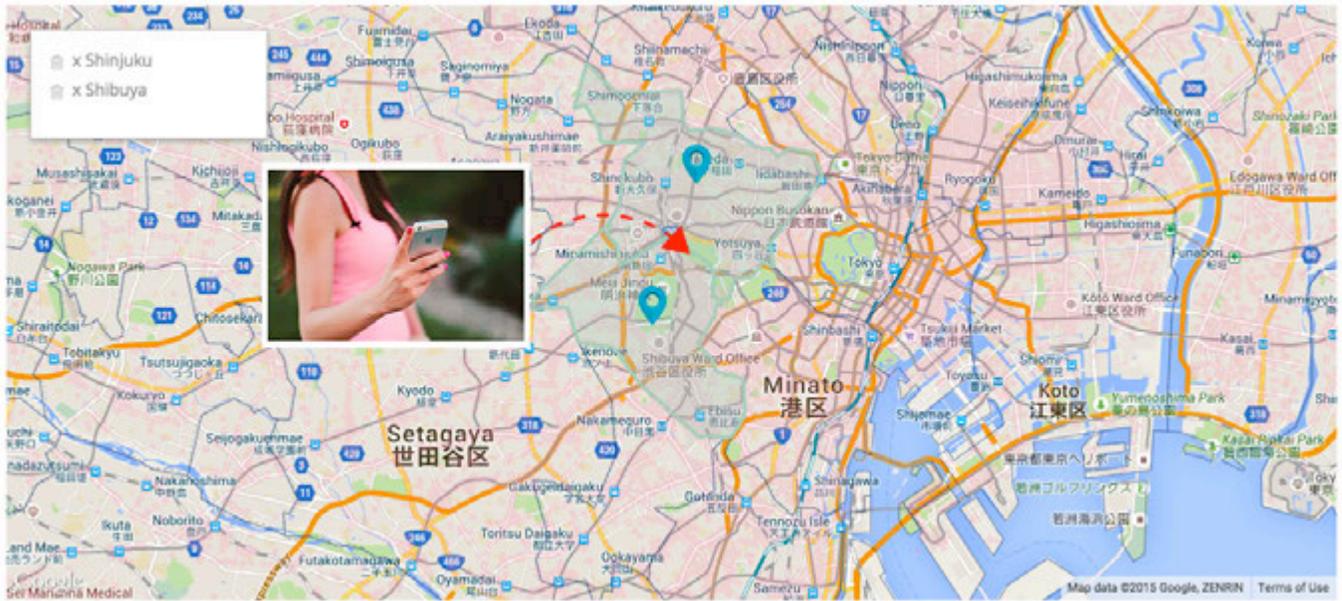
Interest Segment Creation

Over the course of a month, a 24-year-old woman visits separate coffee shops in different districts of Tokyo. Based on her behavior and visits to physical world venues, she is classified as a 'Coffee Fan.'

Interest Segment Targeting

After qualifying as a 'Coffee Fan,' the same woman will be eligible to receive advertisements from businesses and venues that promote coffee products. She will be eligible to receive these advertisements whether she is at home, at work, or traveling anywhere in Japan; in this case she receives a targeted ad for a coffee deal on her way to work in the morning.

In addition to location-based targeting, Cinarra's ad console also provides demographic and time targeting capabilities, ad campaign budget management, and other standard ad platform controls such as frequency capping, a recency setting, white/blacklisting, and ad creative management tools. The ad console also provides a rich set of ad campaign analytics and reports so that advertisers can tailor budgets based on performance metrics. Cinarra's ad console can be operated either directly by ad agencies in self-service mode, or by Cinarra on behalf of advertisers or agencies in managed service mode.

Campaign Management and Reporting

Campaign management and reporting available in Cinarra's Ad Management Console are shown in the following examples:

Figure 1: Cinarra's DSP Advertising Campaign Management Console
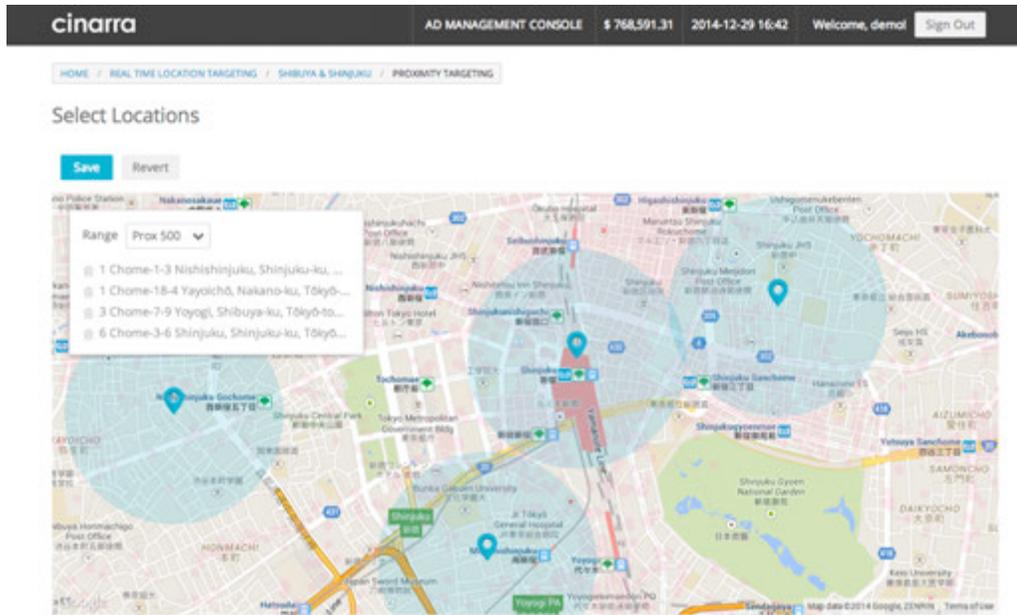
Figure 2: Real-Time Location Proximity Targeting

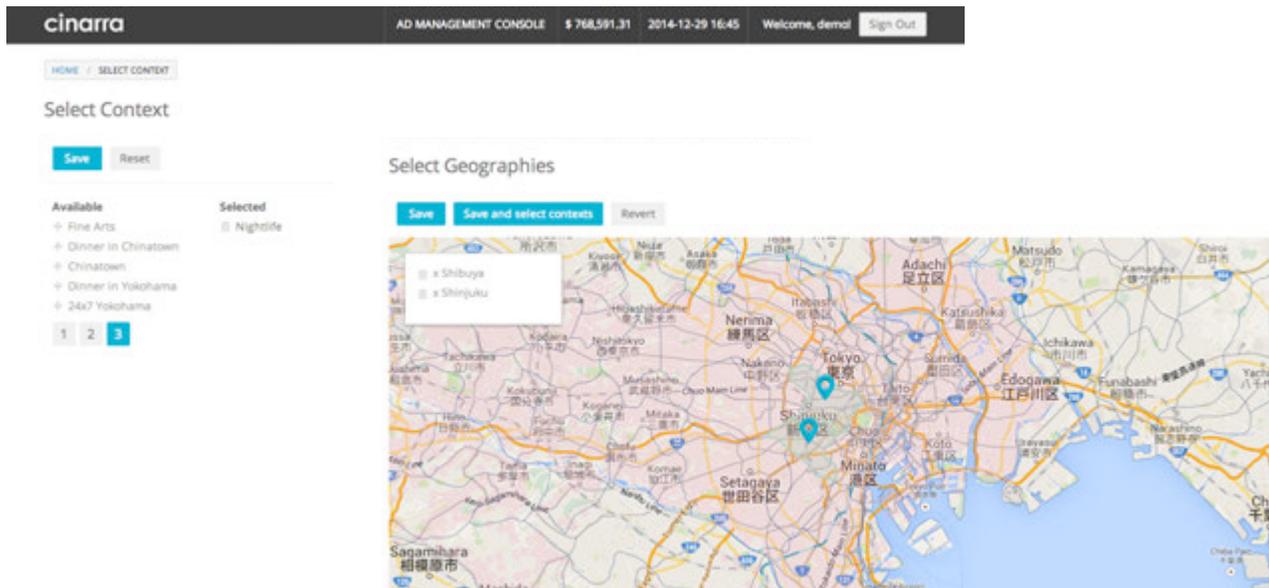Consumers within these radii are eligible to see ads for the configured campaign.

Figure 3: Real-Time Context Targeting

Cinarra's targeting functions allow for targeting of entire city districts, or for a particular venue type (such as bars and restaurants) within one or more city districts for scalable targeting.
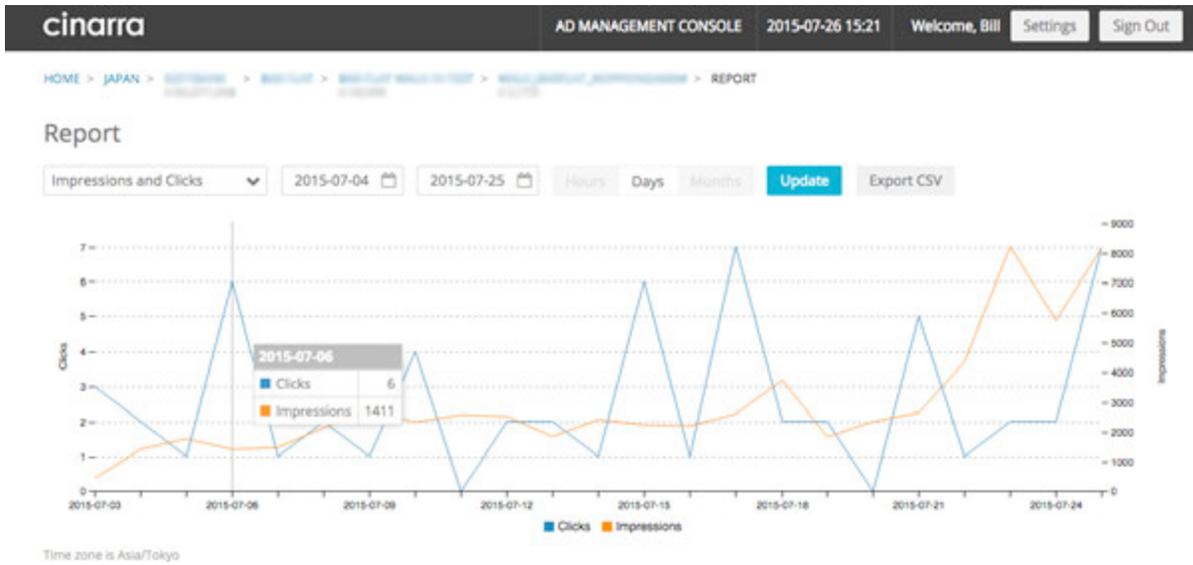
Figure 4: Campaign Reports

Graphical and tabular reports are available, along with CSV data exports.

Campaign Performance Case Studies

Cinarra's real-time location data has been proven to drive higher consumer engagement with mobile ads, resulting in improved mobile ad campaign performance.

Location Proximity Targeting

A campaign run in Japan targeting areas around sports stadiums resulted in a **50%** boost in ad space CTR vs. a wide-area control campaign.

Interest Segment Targeting

Consumer soccer stadium visit information was used to create consumer interest profiles. These consumers were later targeted with ads tailored to their interests, which resulted in a **127%** boost in CTR vs. a control campaign.

Interest Segment Targeting

Consumer venue visits to a mobile operator's retail shops were used to create location-based interest segments. These consumers were targeted with tailored ads, resulting in a **151%** boost in CTR vs. an untargeted control campaign.
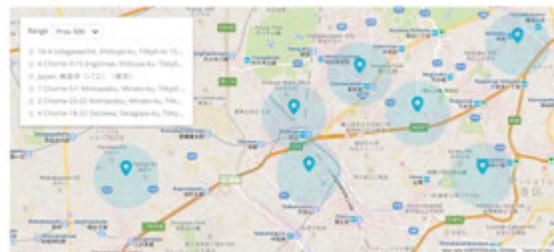
Winning with 'Always On' Mobile Data

Mobile is becoming the center of today's digital economy. However, in order to truly capitalize on valuable consumer data that an 'always on' mobile device can provide, advertisers must tap into the right technology platform – one powered by data from the operator network itself. This high-quality data is made so through the operator's knowledge of device location and behavior beyond subscriber browsing or in-app- activities, coupled with an operator's unique ability to obtain subscriber consent. And through coming integration with multiple operators, advertisers will be able to deliver targeted ads at a very large scale.

Cinarra is the only company that partners with both ad platforms and mobile operators, bridging the divide between these two very different industries to deliver a highly efficient means of targeting consumers with the right ad at the right time – and always with privacy at the forefront. By allowing for deep audience understanding through the delivery of a new type of data – unmatched by what exists today – Cinarra's next-generation mobile advertising solution creates a win, win, win situation for advertisers, operators and consumers alike.

About Cinarra

Addressing the changing needs of an increasingly mobile society, Cinarra Systems' technology enables a more prosperous and secure mobile Internet economy, benefiting mobile operators, advertisers and consumers. By uniting mobile operators and their unique, 'always on' data assets with the advertising ecosystem, Cinarra's platform makes it possible for advertisers to create relevant and efficient mobile advertising campaigns today, and creates a new foundation to support consumers' mobile lifestyle going forward. Cinarra has offices in Silicon Valley, Kazan, Russia, and Tokyo, Japan. Investors in Cinarra include SoftBank Corp., Almaz Capital, Cisco Investments and Siguler Guff & Company.

For more information, visit www.cinarra.com, or follow us on Twitter, Facebook, and LinkedIn.

---

[i] Mary Meeker, KCPB, slide 9 http://www.kpcb.com/insights/2014-internet-trends

[ii] eMarketer's Interactive Guide to Worldwide Ad Spending, December 2014: http://www.emarketer.com/Article/Advertisers-Will-Spend-Nearly-600-Billion-Worldwide-2015/1011691#sthash.AXHdmBQC.dpuf

[iii] eMarketer, Sept 2013

[iv] As of August 2015, Cinarra has integrated to CCI, United, Geniee, with IPONWEB's BidSwitch planned for mid-August 2015.