



BOSCH
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AI Powered Personalized Marketing



Introduction

The power of technology is changing the current scenario in today's era. While the consumer's expectations are growing at rapid pace, industries are also undergoing metamorphosis thanks to new age digital technologies. Digital transformation helps improve consumer experience and operational efficiencies. Some of the trends on this front include personalization, augmented and virtual reality solutions, in-store analytics, which help provide timely assistance and relevant information to a consumer at the right time. Businesses have tons of digital data, waiting to be harnessed. While data is termed as the new oil, deriving meaningful and actionable insights is an important need of a business.

This, coupled with evolving new regulations for data privacy and concerns of the digital users across the globe, it becomes imperative for new age solutions to respect and protect data privacy of the users. Data management and governance play a key role in new age offerings.

We at Bosch take pride in providing solutions to these challenges of this fast-paced digital world. One can experience these Bosch solutions for better understanding of consumer behavior & providing a unique experience to the clients. We combine indoor positioning, behavioral analytics, artificial intelligence to provide improved customer experience at a physical location.

Current Scenario & Transformation In Digital Domain

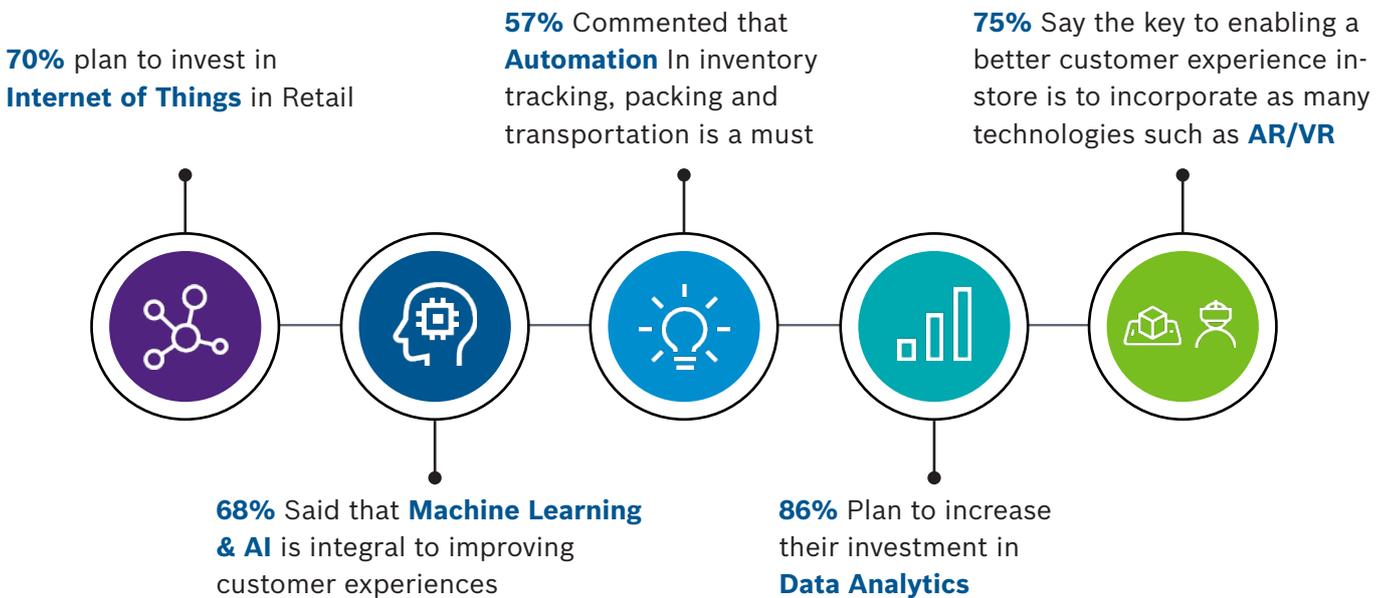
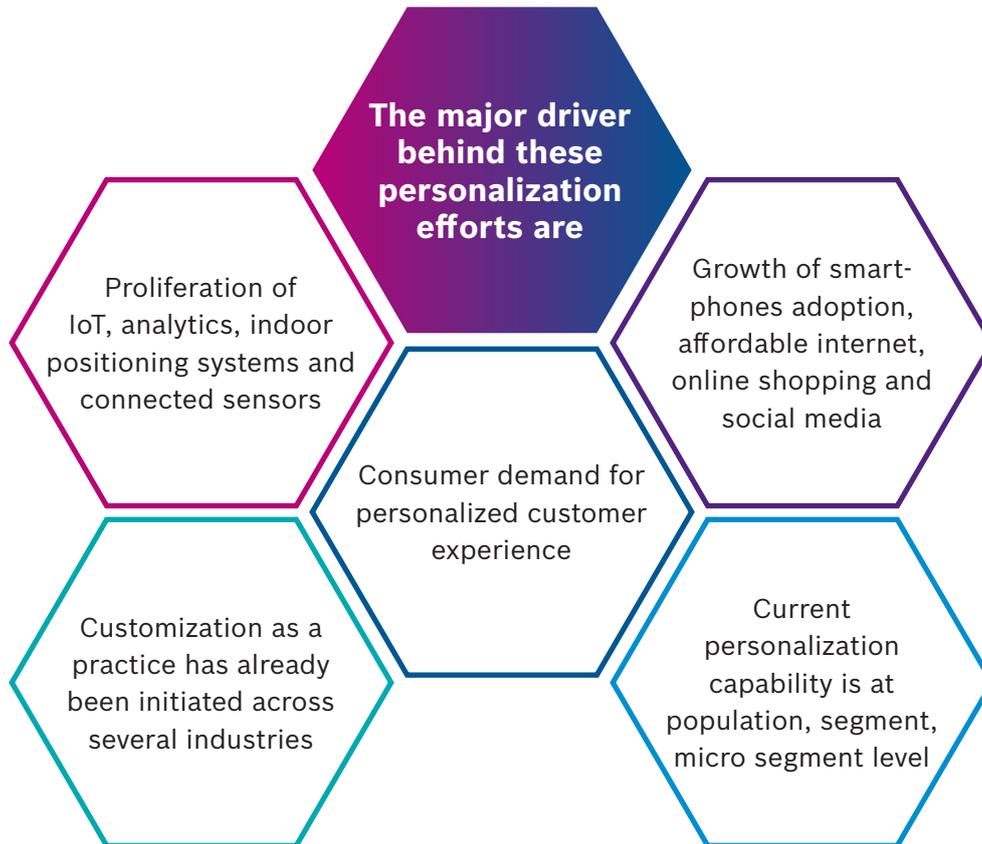


Chart 1: Findings of a survey on plans around new age technologies

Need For Personalization

Personalization is an important factor to continuously enhance consumer experience and hence investing in a digital technology has become imperative for a consumer facing industry. It helps in understanding the consumer's profile better to deliver

better recommendations and in turn helps in improving the overall customer experience in content personalization, targeted ad delivery in digital marketing and to focus on aspects revolving around loyalty.



Personalization Index

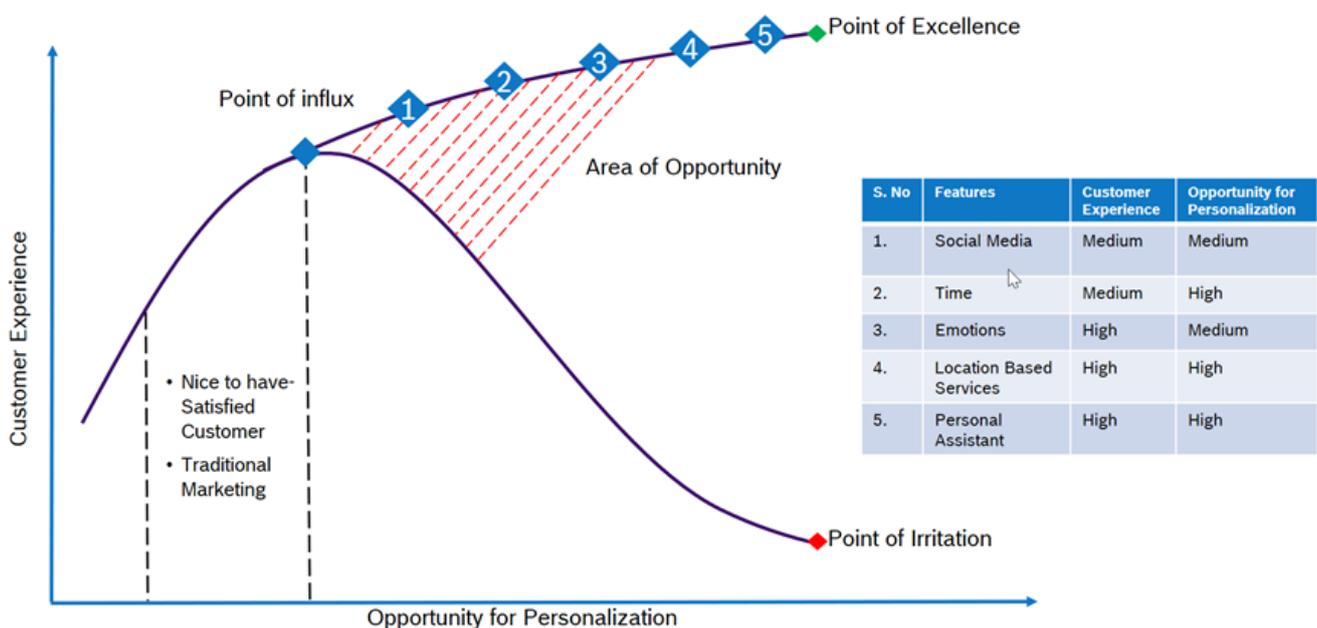


Diagram 1: Personalization Curve

This curve is arrived by plotting user experience vs the opportunity of personalization being enabled for them. The scale for user experience is from -5 to +5, -5 being point of irritation and +5 being point of excellence.

The scoring is such that at any given point of index score there are methods to enable a better user experience by changing the opportunity of personalization with a focus on the user

The ways to enhance user experience is to provide personalization with a view of the context such as location, time, social media, emotions and other higher value parameters, which can be used for enhancing customer delight

At the point where personalization provides a positive customer experience is called “Point of Influx”.

When a customer reaches this point, his experience can be enhanced further so that he moves towards “point of excellence” or a negative effect can pull him down towards “point of irritation” which means the user is dissatisfied because of excess of getting too personal instead of getting the right amount of hygienic personalization.

Influx point is also a measure to understand whether the customer wants more value created for which we need to give him better personalized and relevant recommendations at the right time.

Traditional marketing can be applied until users have reached the “Point of Influx”, post which Context Based Personalization recommendations are necessary, keeping various factors in mind such as location, time, social media, emotions, etc.

Once the point of influx is reached, we need to use analytics to ensure the area of opportunity always scales up to Point of Excellence and Customer delight

As seen in the diagram, using a Personal Assistant will ensure a very high consumer experience by understanding the user behavior and providing the right recommendations at right time and right place.

Points of Excellence

Point of excellence is achieved when a customer is delighted with the personalized services being provided. The factors which lead to POE are:

- ❖ Relevant information at the right time
- ❖ Creating Wow moments
- ❖ Unplanned buying decision leading to higher conversation rate
- ❖ Unexpected value creation by buying same items at a lower price
- ❖ Enjoying personal touch and attention
- ❖ Simple and helpful Ads being displayed on consumer's screen
- ❖ Discounts and offers given are for a higher value which create higher savings for customers
- ❖ Personal assistant, a very simple to use and understand, trustworthy & helpful

Points of Irritation

Points of irritation can lead to losing a valued customer. The factors which lead to POI are:

- ❖ Annoying and vague recommendations displayed
- ❖ Too many unnecessary ads
- ❖ Lots of personal information of consumers going out
- ❖ Offers / discounts not adding much value to the customers requirements
- ❖ Offers / Ads are not in tandem with customer's current mood
- ❖ Privacy issues, law suites, GDPR issues, people not feeling safe with data being shared on public forums

Chart 2: Factors leading to Points of excellence and Points of irritation

Opportunities for actionable insights for enterprises:



Chart 3: Benefits of Physical Analytics & Behavioral Analytics

Segmentation and Personalization

Segmentation and personalization are interdependent on each other. Without segmentation of the target audience, one cannot decide the kind and opportunity for personalization to be used. Personalization and segmentation are often used interchangeably. While segmentation attempts to bucket prospects into similar aggregate groups, personalization represents the ultimate goal of customizing the person’s experience to their individual needs and desires based on

in-depth information and insights about them. Segmentation: It is a one-to-many perspective & focuses on grouping similar user behavior, user attributes or user properties for large scale personalization.

Personalization: It is a first person perspective which focuses on leveraging data analysis and data technology to deliver individualized messages and product offerings to current or prospective customers.

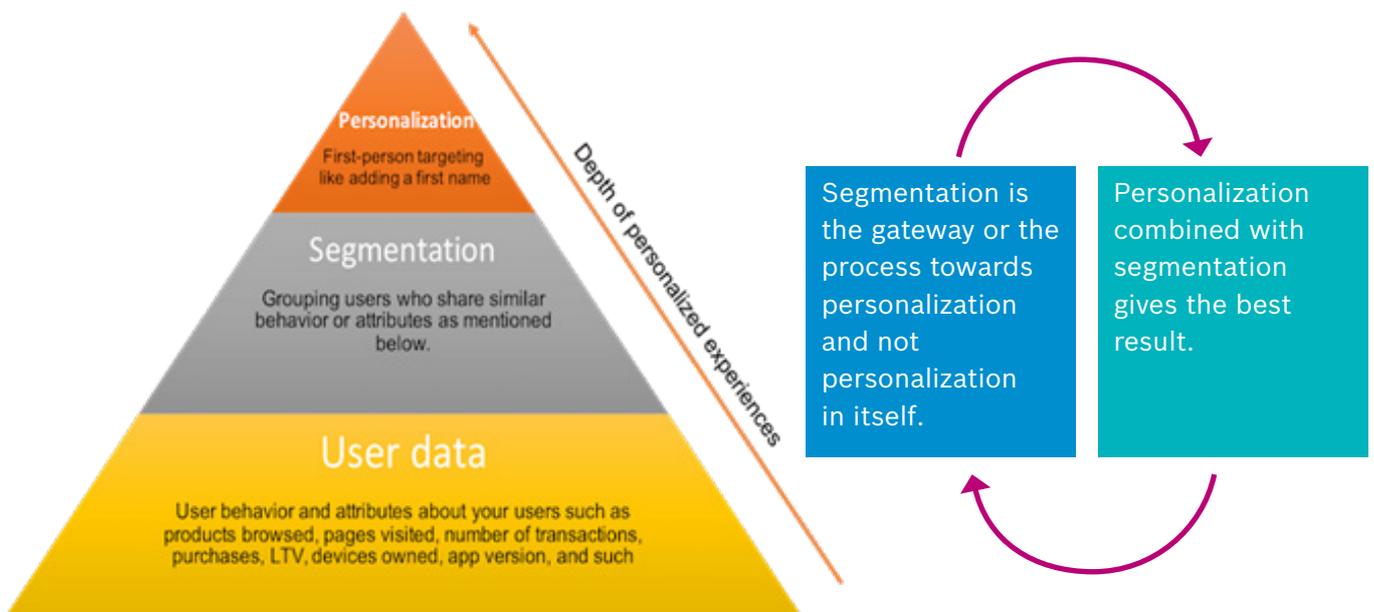


Chart 4: Interplay of Segmentation and Personalization

As seen in Chart 4, the depth of personalized experiences depends on user data, creating segments out of it and personalizing the

message, giving it a first-person perspective. Customers expect personalization as they have lost their tolerance for marketing messages

that aren't immediately relevant to them. They expect content, messaging, and experiences to be tailored to their interests. They expect

brands to know them individually, not just their demographics.

The different types of Market Segmentation are:



Geographic Segmentation

This type of market segmentation is important for the marketers as people belonging to different regions may have different requirements. People belonging to different regions may have different reasons to use the same product as well



Demographic Segmentation

Demographic segmentation divides the market on the basis of demographic variables like age, gender, marital status, family size, income, religion, race, occupation, nationality, etc. This is one of the most common segmentation practice among the marketers.



Behavioral Segmentation

The market is also segmented based on audience's behavior, usage, preference, choices and decision making. The segments are usually divided based on their knowledge of the product and usage of the product.



Psychographic Segmentation

Psychographic Segmentation divides the audience on the basis of their personality, lifestyle and attitude. This segmentation process works on a premise that consumer buying behavior can be influenced by his personality and lifestyle. Personality is the combination of characteristics that form an individual's distinctive character and includes habits, traits, attitude, temperament, etc. Lifestyle is how a person lives his life.

Keeping all the above factors in mind, we can personalize the experience for any customer. 1-1(One to One) marketing is the new approach taken by marketers for improving marketing efforts by actively tracking and responding to consumers. This means consumers can be targeted in the most relevant manner.

The various avenues could be featured events, a company website, social media sites, emails, blogs, videos and other forms of content, allowing the marketers to cater to the consumer's needs. This is quite critical to run a successful campaign.

Revenue Potential of Customer Experience

As we move towards 1 to 1 personalized marketing from segmented marketing it is found that the potential for revenue generation per customer increases.

Below are a few key points on how Personalized Marketing is different & more effective from Generic Marketing:

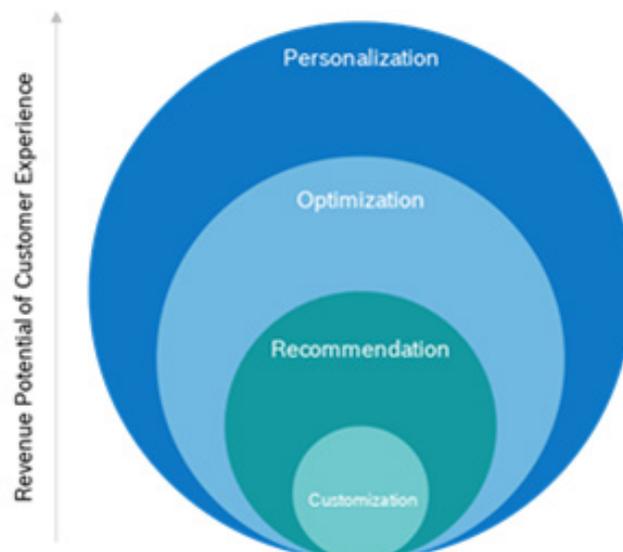


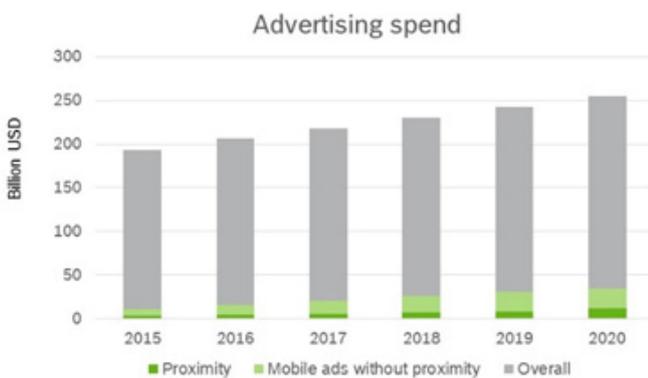
Diagram 2: Revenue Potential of Personalized Marketing

Generic Marketing	Personalized Marketing
Segment based personalization	1 to 1 personalization
Relevance based on segment	Relevance based on individual
Customer preference captured in silo	Unified view of a customer from all the channels
Personalization based on user behavior with/without consideration to context	Personalization with consideration to context
Probability of business conversion is low to medium	Probability of business conversion is medium to high

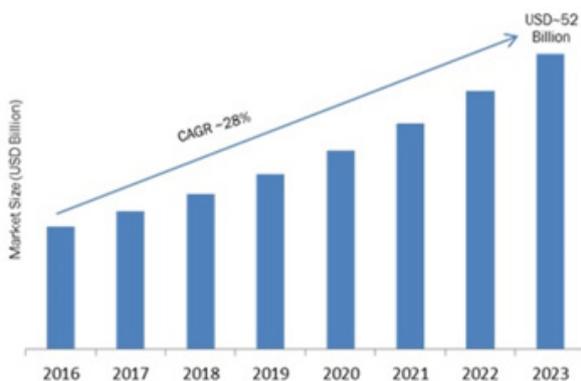
Segmentation and Personalization

The proximity marketing market is expected to be worth USD 52 billion by 2023 at a CAGR of 28% between 2017 and 2023. The current marketplace is expected to be driven by the heavy demand for personalized location-based services. The commercialization of personalized location-based services is on the rise. The combination of location-based data

and existing personal data creates rich and contextualized user experiences. In addition, the increased use of beacons and growing availability of spatial data & analytical tools further propels the growth of this market. The diagram below depicts the advertisement spend on proximity marketing:



Proximity marketing is expected to account for roughly 36% of the mobile ad spending by the year 2020. Advertisement spending for Proximity Marketing is expected to grow at a CAGR rate of 21.5% (2016-2020).



Proximity Marketing Market is expected to grow to approximately USD 52 Billion by 2023, at 28% of CAGR between 2017 and 2023.

Industry Overview For Personalized Marketing

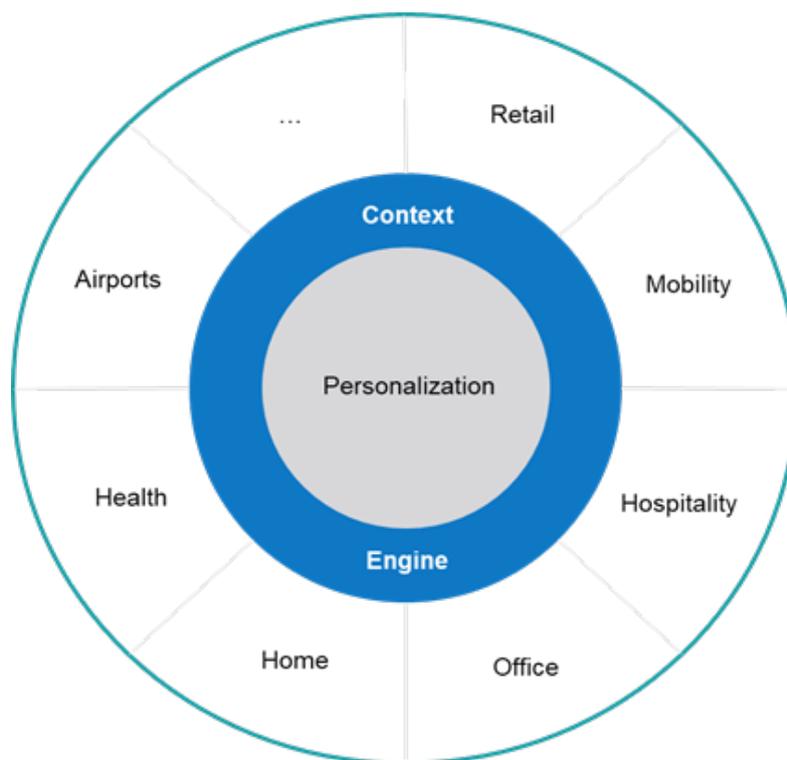
IERO works with business and help them in providing personalized experience to the end users for various domains such as Mobility, Retail and Hospitality. IERO understands the value of personalization for the overall customer experience that leads to increase in customer stickiness further improving the overall revenue for the business.

In this digital era, retailers have multiple touch points such as eCommerce, social media, Email, CRM and brick & mortar to manage and provide personalized seamless experience. IERO aims to provide unified view of the customer and provide a complete omni-channel experience. With the help of AI and Machine Learning, IERO understands the user behavior and enables business to predict the next purchase and provide relevant recommendations and offers at the right time

and at the right place, thus enabling business to upsell and cross sell the items strategically and increase the average bucket size.

IERO aims to provide personalized experience not just when you are at store but also when you are on the move. IERO partners with OEMs and Mobility players to provide an enhanced customer experience to the end users. Thanks to Machine Learning, personalization gets incorporated by using real time behavior of the user in amalgamation with the context such as Location, Weather and in car data.

It is imperative for enterprises across industries to break the clutter and reach their users in an effective manner while retaining their identity and providing enriched experience and also not impinging on their privacy. Some of the industries with high potential to achieve this digital transformation.



IERO

IERO is a unique entrepreneurial venture from Bosch focusing on providing 1:1 personalization powered by its Artificial Intelligence (AI) Engine.

This next big jump in technology will help enhance user experience across domains such as retail, mobility, hospitality & other

consumer-centric domains. IERO brings the benefits of the digital world to the physical space to enable new user experiences.

We at IERO are currently focusing on creating value for enterprises by enriching the consumer experience through privacy centric context-based personalization.

Our Current Offerings:



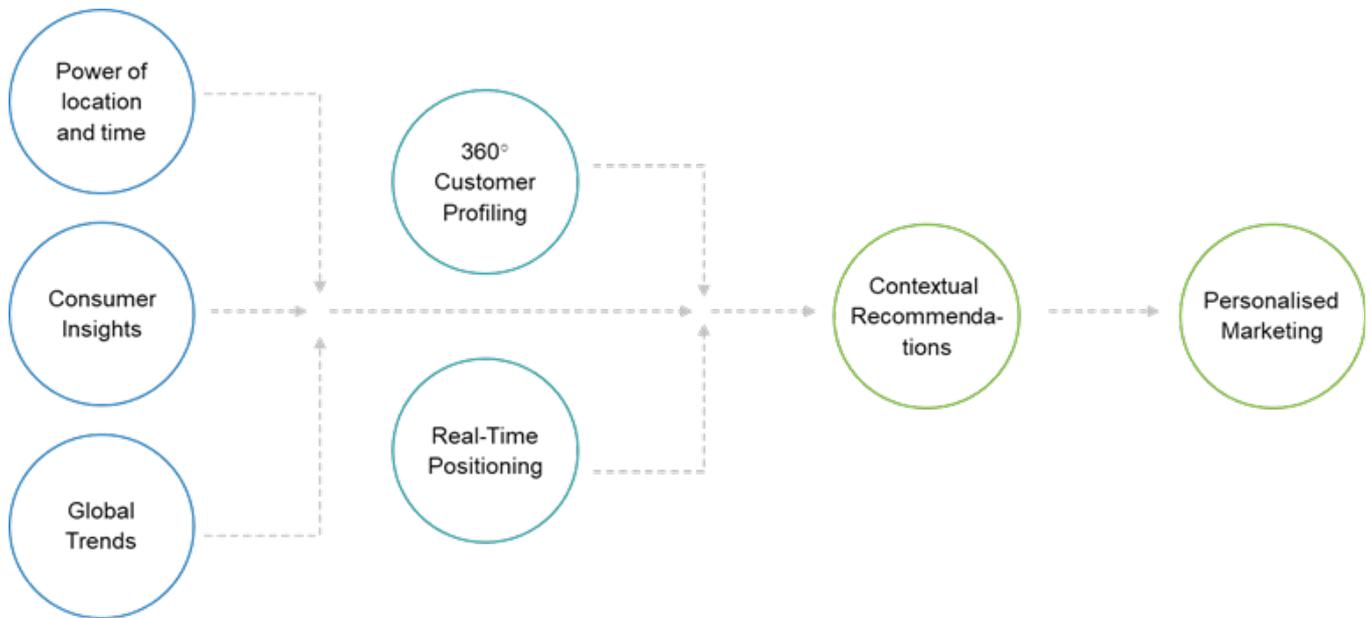
Powered by Bosch

Redefine journeys with interactive experiences of user assistance and recommendations

Positioning Technology	Contextual Recommendations	Actionable Insights
<ul style="list-style-type: none"> ▶ Our technology helps interpret the physical space to enhance the customer's journey 	<ul style="list-style-type: none"> ▶ Understanding customers and engaging with relevant recommendations customized to the moment. 	<ul style="list-style-type: none"> ▶ By understanding spaces & customer choices, we provide you with enriched insights that help you create a positive impact.

IERO's state-of-the-art technology combines the power of context and individual user preferences in delivering a new-age user experience. Our contextual recommendations engine integrates user preferences derived from multiple sources including purchase

history, app usage, fine-grained behavioral indicators based on location, time and other factors to create an insightful 360-degree view. Such enriched insights help in personalizing the user experiences.



We enable businesses to engage their users at the right moment on a one to one basis and empower them to make informed decisions. The proximity marketing software market can be segmented on the basis of component, technology and application.

Proximity marketing market consists of Wi-Fi, BLE beacon, near field communication, GPS based geo-fencing among others. GPS based geo-fencing enables users to enhance their business by sending push notifications to the people who are into close proximity of their store. The increasing importance on business intelligence and growing competition in various sectors is boosting the proximity marketing market. The increasing adoption of smart-phone and development of analytical tool is one of the significant factor driving market growth.

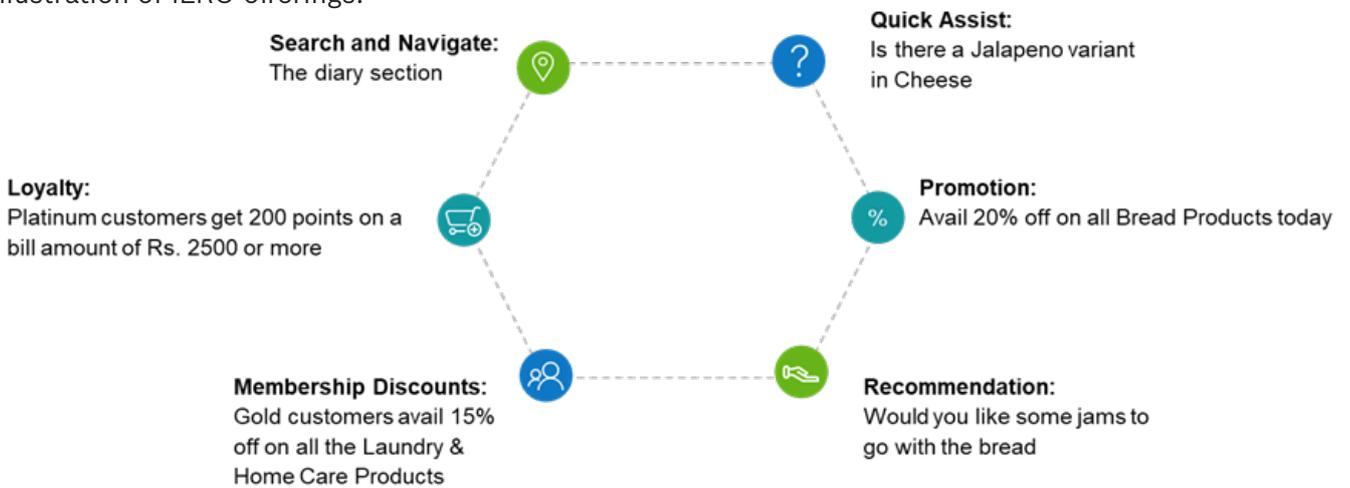
Most retail stores are using GPS geo-fencing application to increase customers in store, this is one of the significant factor driving market growth. Beacons allow advertisers to deliver customized messages on-site aimed at improving the shopping experience. Message customization is done on consumers' preferences, previous shopping habits, location, and other data. With the help of beacons, messaging is woven into the larger customer experience, creating both interactive and relevant messaging—all at the time of purchase. Beacons are small indoor positioning devices that use low-energy Bluetooth (BLE) to communicate with a shopper's smart-phone in the hopes of improving the in-store shopping experience.

USE CASE - Retail Redefined

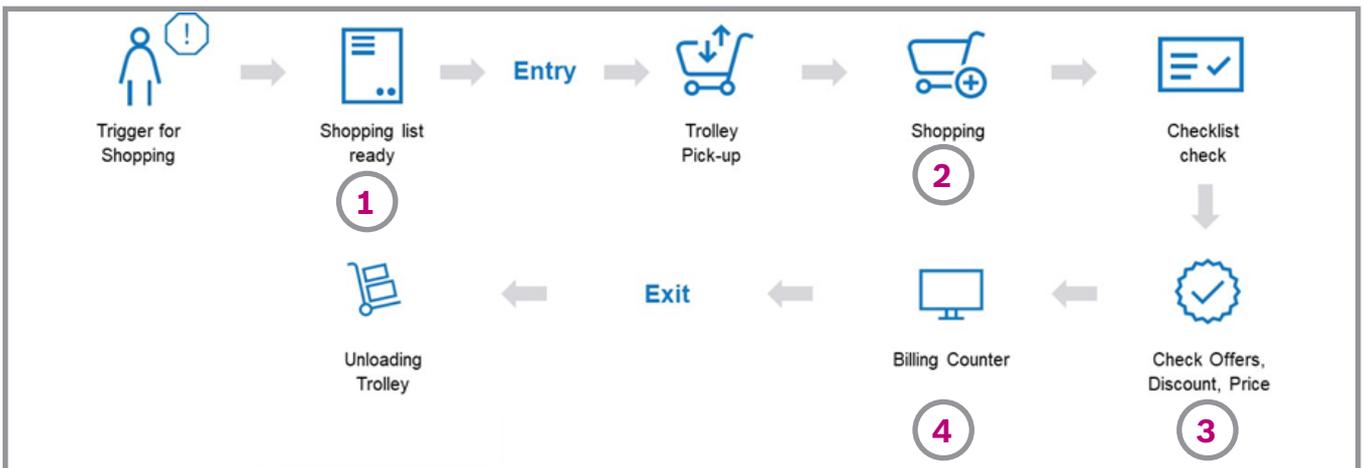
Engage your consumers better!

Consumer expectations	Next Generation Retail powered by IERO
What do end consumers expect from new-age digital technologies? 1. Right Recommendation at the Right Time and Right Space 2. Enhanced & Enriched Experience	1. Personalized Proximity marketing powered by IERO AI Engine 2. In-store navigation and product search powered by IERO IPS (Indoor Positioning System) 3. Hassle free checkout – digital payments, self-checkout 4. Virtual E-kart 5. Actionable insights through heat maps, consumer analytics and many more

Illustration of IERO offerings:



IERO Solutions Across A Retail Consumer's Store Journey



IERO Offerings	1	2	3	4
	 DIGITAL SHOPPING LIST	 PERSONALIZED OFFERS AND RECOMMENDATIONS	 IN-STORE CAMPAIGNS	 MOBILE SELF-CHECKOUT

USE CASE - Mobility Redefined

When the Journey Matters more than the Destination!

Consumer expectations

How to make journey more relaxing and provide interactive experience?

Next Generation Mobility powered by IERO

- ▶ Guidance during emergency, suggesting nearest service stations based on the real time location.
- ▶ Error detection and monitoring of brakes, battery, sensor and exhaust related errors.
- ▶ Content personalization such as music, news, sports with relevant recommendations
- ▶ Context based personalization for in-vehicle transactions including online purchases, information and ad recommendations.

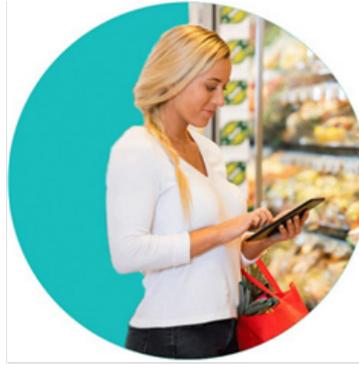
Illustrations of personalized marketing for mobility



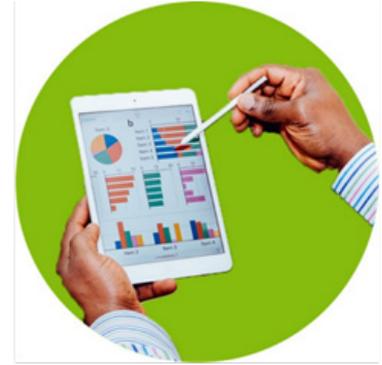
IERO Enables Enterprises



Enabling Experiences.



Engaging Consumers.



Enriching Insights.

To know more visit <http://bosch-iero.com/>

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About RBEI

Robert Bosch Engineering and Business Solutions Private Limited is a 100% owned subsidiary of Robert Bosch GmbH, one of the world's leading global supplier of technology and services, offering end-to-end Engineering, IT and Business Solutions. With over 19,500 associates, it's the largest software development center of Bosch, outside Germany, indicating that it's the Technology Powerhouse of Bosch in India with a global footprint and presence in US, Europe and the Asia Pacific region.

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