



# Nudging Gamification

Increase customer value and generate recurring revenues



**The tool to build meaningful  
relationships with your customers and  
increase the lifetime value.**

# NEOSPERIENCE

## Empathy In Technology

We design digital solutions for companies that want to grow their business and increase their customers' value, introducing Empathy into Technology,

Technologic evolution is shaped around performance optimization, and has generated significant changes in the relationship between brands and customers, sacrificing the value of individual relationships in favor of efficiency.

In order to re-establish a non-mediated relationship with customers, companies have to change their perspective, including empathy in their relationship and sales processes, both online and offline.

Neosperience is offering a range of ready-to-use solutions, to help offering targeted experiences to each customer. This way you can get to know and localize your clients, increasing your brand value and sales margins.

In February 2019, Neosperience has been listed in the Italian Stock Exchange. Neosperience technology allowed to develop several start-ups, renowned for their innovation potential in each one of their fields.

Everyday our professionals work to blend technology with empathy, merging dream, form and use function, to benefit all of our customers.

3	<b>Presentation</b>
5	Nudging Gamification
6	Unique Value
7	<b>Case Studies</b>
8	Annex laRinascente
11	The Toy Box
15	<b>Data Sheet</b>
16	Architecture
20	Technology
22	Security
23	Integrations

# NUDGING GAMIFICATION

A positive reinforcement and  
Gamification to engage the audience

In the Customer Experience era, offering high quality products is not enough for gaining customers and their loyalty. Today it's essential to create immersive experiences. However, many marketing initiatives are tailor-made and therefore not easy to replicate. In order to make this activities more effective and sustainable over time, it's necessary to include them in a more efficient system, also repeatable on a large scale.

## The Solution

Nudging Gamification allows you to create unique experiences to encourage your customers to accomplish specific actions and and adopt the desired behaviors.

This way you can be useful for your customers by stimulating purchases, loyalty, positive word-of-mouth and, more in general, audience engagement.

These dynamics can be applied flexibly to different touchpoints, both online and offline, aligning them to your business strategy and pursue the most ambitious business objectives.

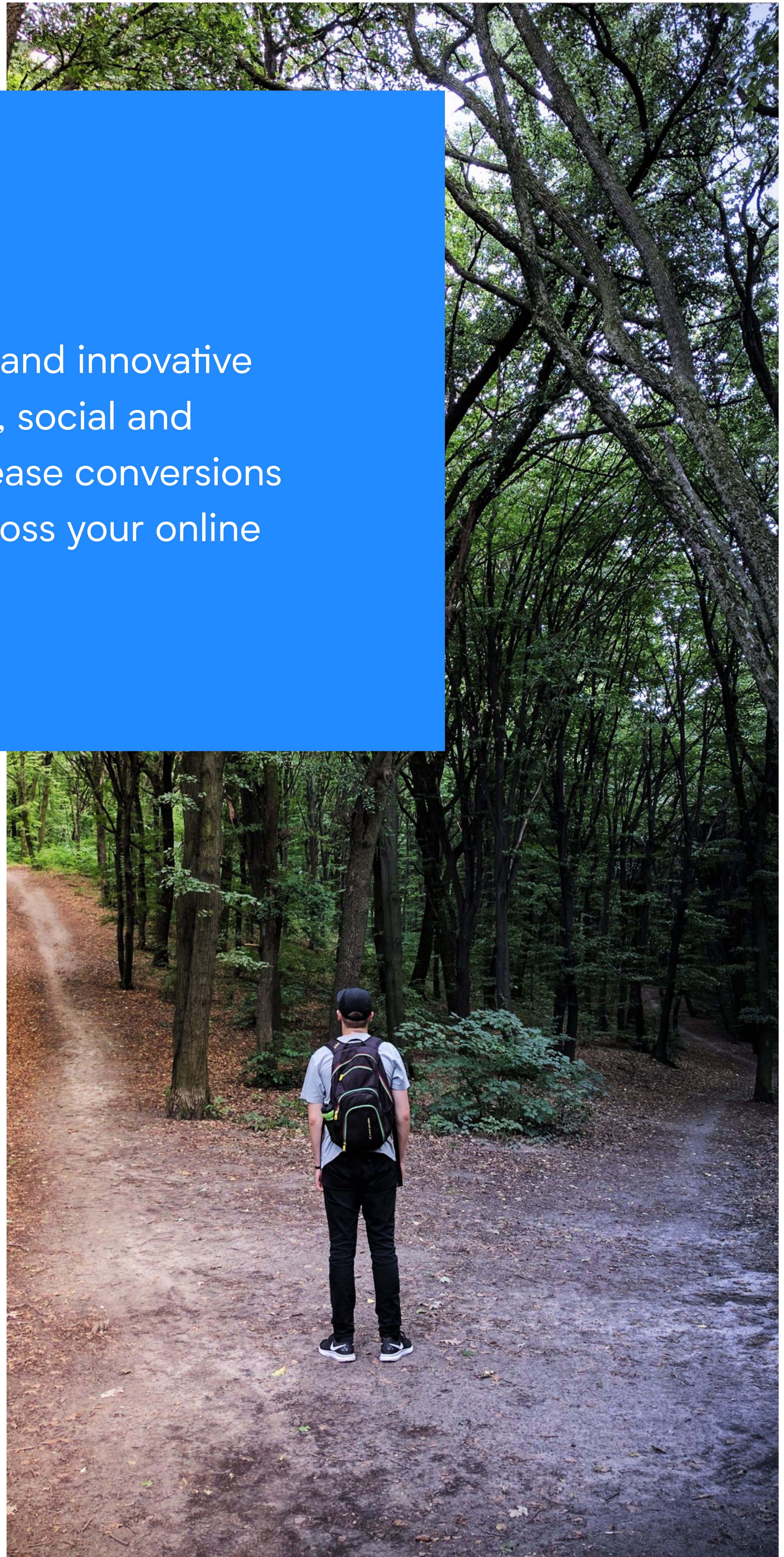
# UNIQUE VALUE

## Nudging Gamification

The only tool that uses unique and innovative techniques based on cognitive, social and behavioral psychology, to increase conversions and customer engagement across your online and offline touchpoints.

## Competitive Advantages

With Nudging Gamification you can apply psychologic techniques that use positive reinforcement to make a specific choice look more appealing, so that you can accompany your customers during their decisional processes.



# Case Studies

# ANNEX

# LA RINASCENTE

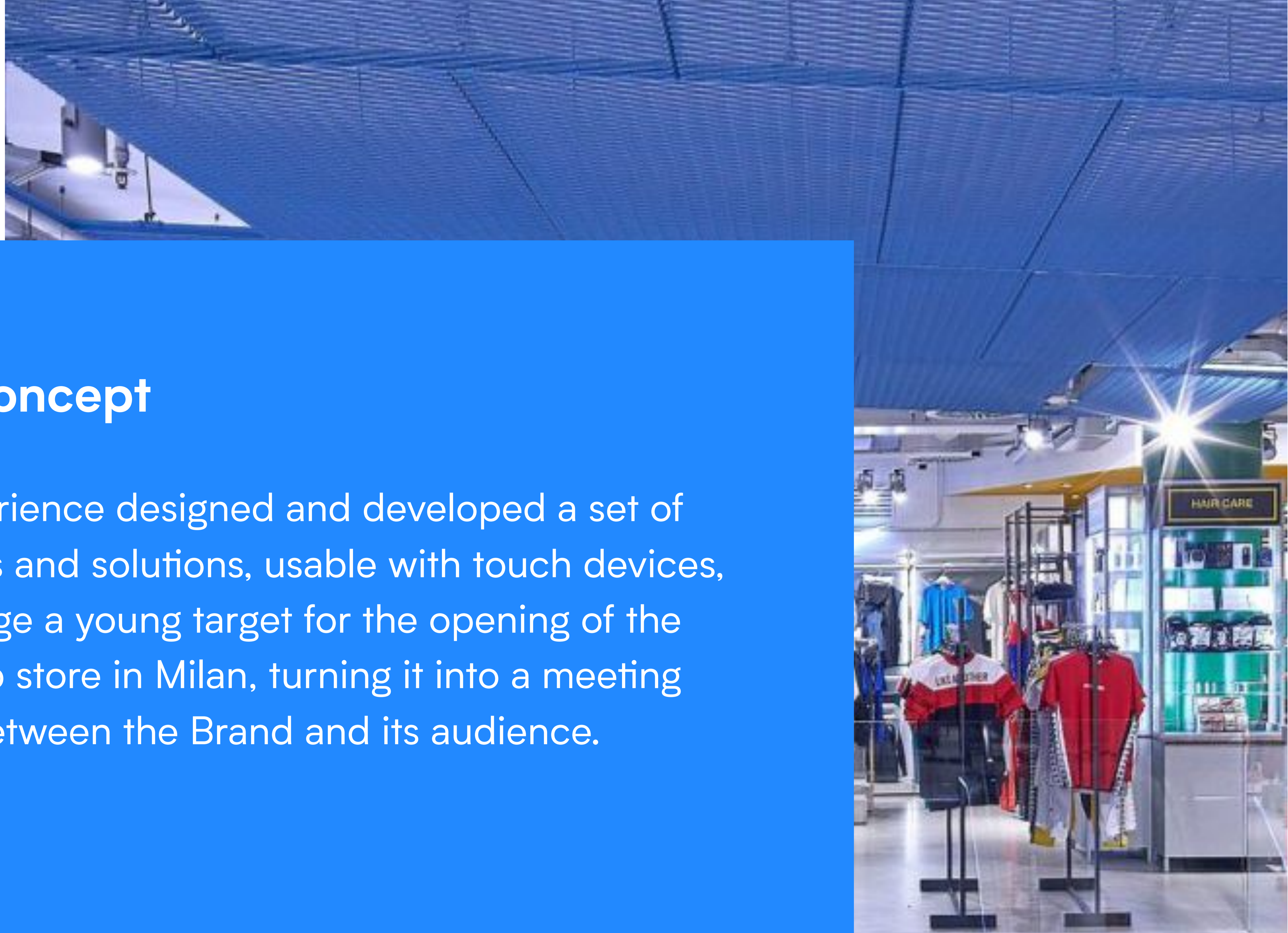
Enhance the engagement of young customers in store





## The concept

Neosperience designed and developed a set of services and solutions, usable with touch devices, to engage a young target for the opening of the Flagship store in Milan, turning it into a meeting point between the Brand and its audience.



## The context

The aim of the project was to create a targeted tool to generate engagement and loyalty, to melt digital experience and physical store. That's why the app needed to have a strong social connotation, in order to allow La Rinascente to contact, engage and retain a very young audience.

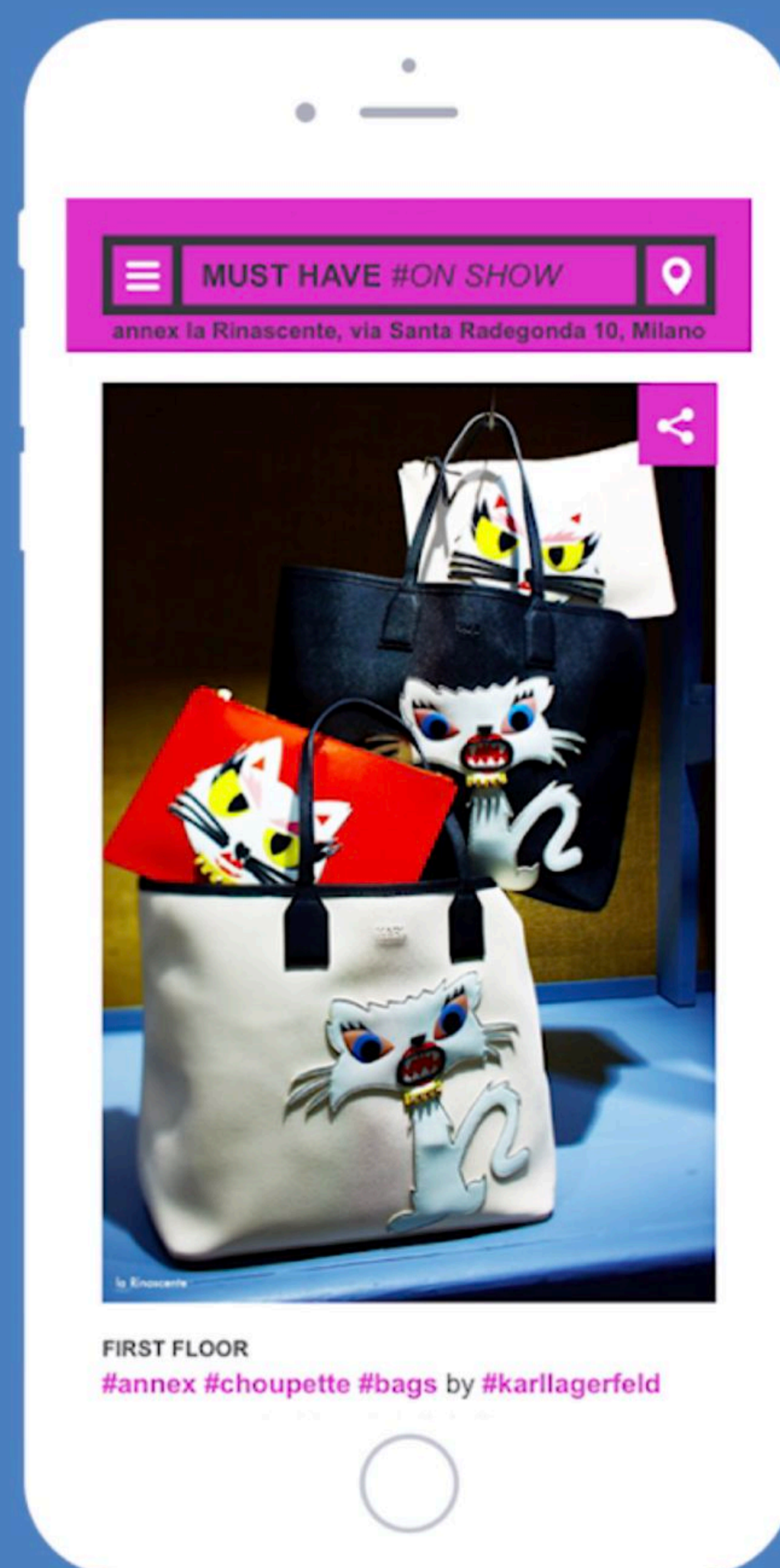
Moreover, Annex La Rinascente responded to the necessity of increasing Brand relevance in the fashion industry, strengthening its reputation and authority with the stakeholders.

# ANNEX RINASCENTE

Solution and architecture

The Annex La Rinascente app was designed and developed according to the latest trends and an innovative and coherent style, immediately engaging young users and winning the challenge to make the audience interact with the contents one a daily basis.

The goal to create a community for fashion lovers and offer an immersive experience was achieved beyond all expectations. Brand loyalty increased and relationships with customers were consolidated. Thanks to the photographic contest and the geo-localized notifications in the store surroundings, the customer is invited to come back to the store and interact with the brand and its products.



# THE TOY BOX

Mattel





## The concept

The Toy Box is the App designed to celebrate the values of the Mattel brand and engage customers in an innovative customer experience. It was developed to help the customer immerse in the Mattel world, and find the perfect gift for a special occasion.

## The context

Mobile technology has already left an indelible mark in customers' habits and behaviors, making them more and more demanding and connected. Brands in the Retail world had to work hard to innovate their strategies and adapt to the new technologic devices ecosystem. With Toy Box, Mattel decided to take the first step towards this direction, to experiment, comprehend and and transpose this innovation into the reality of the store.

# THE TOY BOX

## Solution and architecture

The Toy Box App is based on the Nudging Gamification Solution, which in turn was developed from Neosperience Cloud, and includes a set of modules and technologies designed to increase customer engagement.

The App allows to create engaging experiences that increase brand recognition, enhance sales from partner companies, improve the Mattel product experience and bring more customers inside the store.

The Toy Box App, compatible with iOS and Android, allows customers to use an enthralling entertaining device, to find the perfect toy for every kid, for every occasion. Personalized push notifications send a relevant, real-time call to action that encourages the purchase. To complete the experience, 3D visions, Augmented Reality and Social Network sharing allow Mattel to obtain a competitive advantage and stand out from the competitors.

The purchase experience is enriched by nudging and gamification dynamics, combined with proximity marketing activities, push notifications and iBeacon, to strengthen the products storytelling and improve social interaction, making it more fluid and natural.

The customer, with his own smartphone, is guided inside the Mattel world, where he can find new toys in an easy and immersive way. Engagement, interaction and loyalty are this project's keywords.

Users can access to Augmented Reality in the 3D section, framing the markers with their own smartphone, and can watch the toys coming to life and take pictures to share with their friends. Geo-localization allows to find the nearest store and invite the customers to get inside the store.

Another function is TV, to entertain the users with engaging videos about the products, events and latest news, always updated. Finally, the "When I used to be a kid" function allows the user to immerse in his childhood memories. By choosing a specific year, users can find out which were the most popular toys at the time.



CONSULTA  
IL CATALOGO INTERATTIVO



VIVI LA MAGIA DELLA  
REALTÀ AUMENTATA



FAI UN SALTO  
INDIETRO NEL TEMPO



CHIEDI AL TUO  
ASSISTENTE VIRTUALE

# Data Sheet

# SOLUTION'S ARCHITECTURE

## Structure of a program

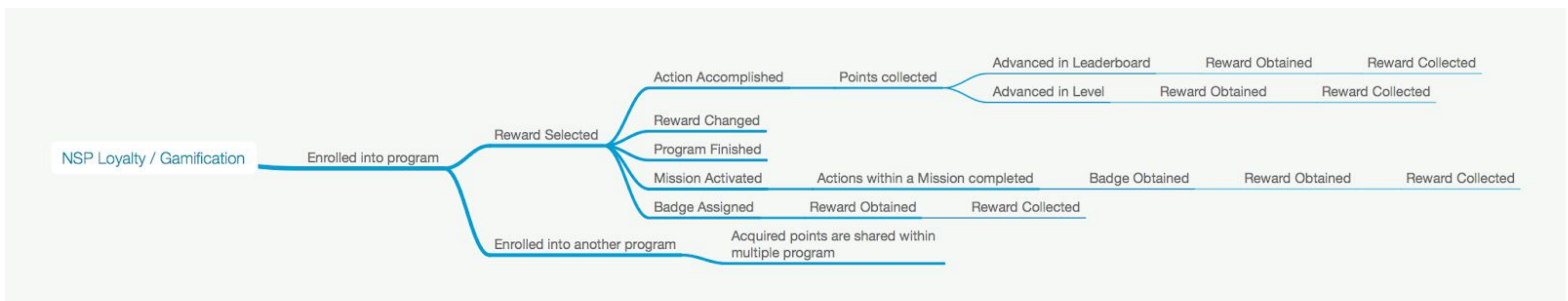
The use of Nudging Gamification requires to define, through the user's console, a series of entity subjects of the workings of the operation.

- **Program:** it is the Gamification container and the first object that has to be created. The other entities contain a reference to the program that acts like sandbox for a given initiative;
- **Player:** it represents the customer in the gamification domain. It has a collection of the obtained entities and has a status and a position inside the leaderboard. It is created through a signup operation on behalf of the customer;
- **Actions:** they represent the the founding element of every Gamification initiative and represent both the actions offered to the user and the actions that are actually carried out by a user inside a specific context, through actionPerformed. They can be both recurring and one-off actions. In the first case it is possible to define a range within which it is not possible to repeat the same action. Moreover, actions can be unique for every program (once all the missions are complete, they result as completed) or unique for every mission (if they are present in more than one mission, they can be completed more than once);
- **Points:** the user gains points once he has achieved the objective. They represent a currency inside the gamification system, and the user can accumulate, spend, or loose them, although it's usually unadvisable to use punitive mechanics;



- **Badge:** they represent goals that modify the player’s status. They can only be won, and they don’t have a numeric quantification – if not in the badge level, in case it is possible to increase a certain entity’s status;
- **Mission:** it is a set of actions defined inside a program. They can follow a classic logic (they define the minimum score that has to be reached, after which the mission is accomplished), or the “next generation” type (there are several missions which result as accomplished only when the actions inside them are completed);
- **Rewards:** they virtually represent the rewards that will be issued to the player. They can be associated to points, badge and missions that have to be accomplished to receive the reward;
- **Leaderboard:** it represents the general vision inside the program, gathering the different players that are put into relation basing on the actions/missions accomplished or according to the value of the points awarded.

The event flow generated by the client follows the hereby scheme:



## Architettura software

I componenti principali della Solution sono essenzialmente la console di configurazione, accessibile attraverso la Neosperience Cloud, e i servizi che implementano le logiche di gamification.

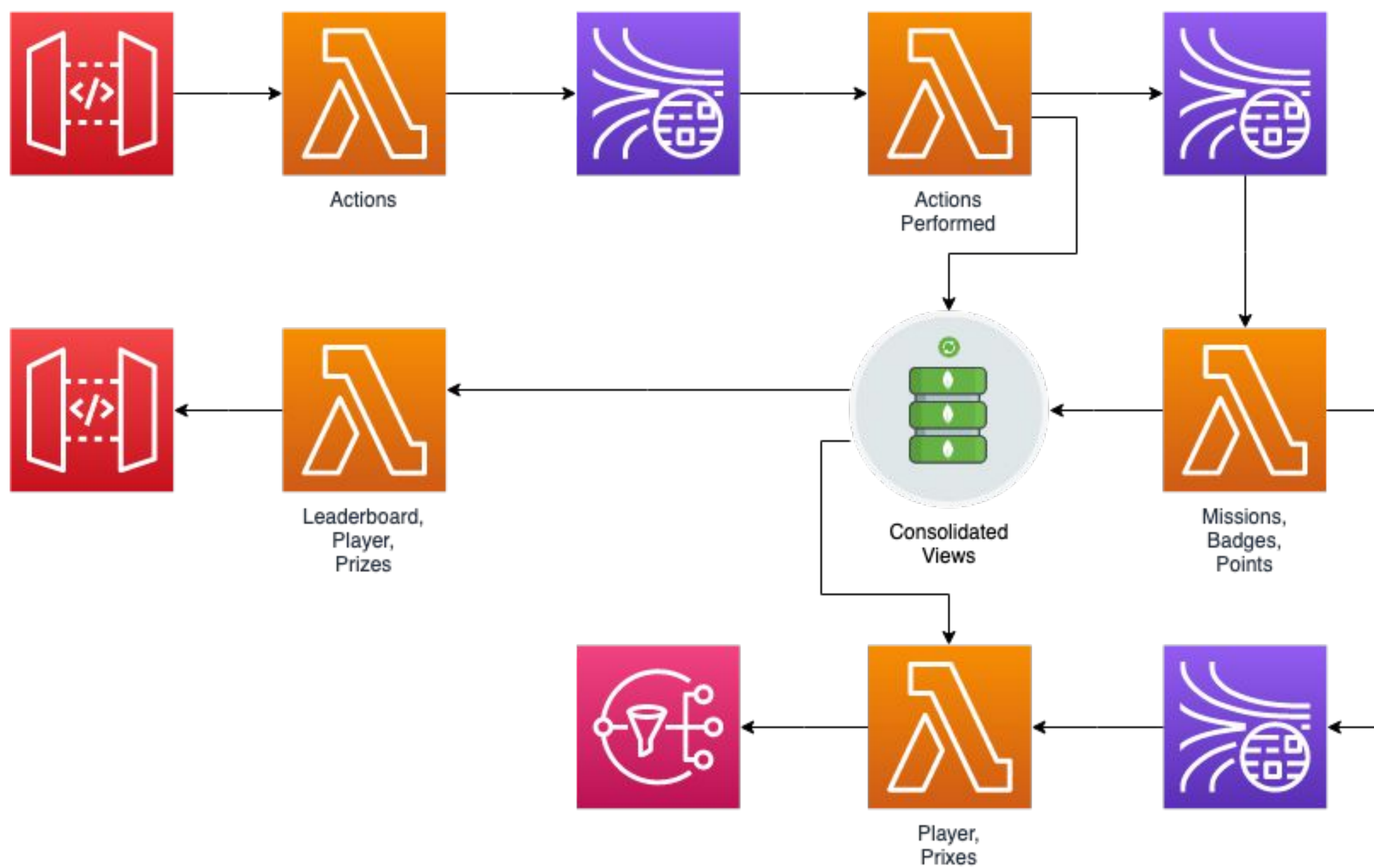
Al momento della configurazione di un program, la console distingue tra logica “classica” e logica “next generation”, così da configurare l’orchestrazione dei servizi sottostanti.

La natura asincrona ed imprevedibile di un program di gamification ha richiesto scelte architetturali importanti, quali l’adozione del pattern architetturale denominato Command Query Responsibility Segregation (CQRS). Tale pattern si presta bene ad essere applicato in quei contesti ove è necessario che i servizi mantengano lo stato di funzionamento di un sistema (in questo caso il program in relazione all’utente).

Secondo la logica CQRS, le operazioni effettuate dai client sono trasmesse ai servizi nella forma di comandi che elaborano su una specifica entità e ne vanno a modificare lo stato (ad esempio il completamento di un’azione). Tali modifiche sono registrate all’interno di una base dati persistente e costituiscono la sorgente di verità del sistema. Alcuni modificatori vanno, al variare della sorgente di verità, ad aggiornare delle “viste” preferenziali sullo stato di entità del sistema (ad esempio la leaderboard oppure lo stato del player).

In questo modo è possibile generare più effetti alla ricezione di un singolo comando, gestendo le dipendenze tra le varie entità (ad esempio fornire un badge al completamento di una missione, oppure quando un player raggiunge il primo posto nella leaderboard).

Il pattern CQRS viene utilizzato con successo in caso di eventi potenzialmente molto numerosi unitamente ad un secondo pattern architetturale denominato Event Sourcing (ES): i comandi inviati ai servizi sono modellati come eventi, registrati da uno stream che svolge la funzione di source of truth al posto della base dati e prende in questo caso il nome di log. La verifica ed il consolidamento del log sono operazioni molto frequenti e garantiscono la consistenza del sistema ed un recovery in caso di errori.



Therefore, these services offer a single submission endpoint of the events related to the actions, and several endpoints to interrogate the different available views. The eventual consistency, due to the distributed nature of the system, allows to manage transactions with asynchrony and, through the log, it allows to carry out operations such as the withdrawal of the effects of a given action.

# USED TECHNOLOGY

Nudging Gamification uses specific technologies to manage the data stream, using both the Neosperience Cloud technology in the Gamification function form that provides the basic elements of the system and logics, and the AWS streaming services, that allow the events processing and the backup implementation logics through Amazon Firehose and retry in case of failure of a given action, thanks to the presence of Dead Letter Queue associated to the Lambda functions that receive an event if the elaboration fails, allowing to retry or submit to recovery/errors notification logics. Moreover, the Kinesis Streams peculiarities allow the reception of ordered events inside a specific shard, therefore solving the competition between the actions of different players or between multiple actions of the same player, that could lead to inconsistent situations or the double accounting phenomenon (an action counted twice).

## **Client Web**

Thanks to the use of infrastructural elements of Neosperience Cloud, Nudging Gamification offers an API layer according to the REST standard, authenticated according to the OAuth2 specifics, through credentials assigned to a specific user that qualify him (also anonymously) in the system.

Services are developed through NodeJS on AWS Lambda technology, through the use of Serverless Framework. The persistence of the views is offered by MongoDB and the infrastructure is created at every deploy thanks to the use of AWS CloudFormation for the cloud resources scripting. Clients access the services through HTTP REST calls in SaaS mode. The console is developed as a Neosperience Cloud extension, with React + Redux technology such as Single Page App, released through Amazon CDN.

## Services

The service component of Nudging Gamification uses the Neosperience Cloud functions, inheriting its best practices and infrastructural services, beside the deploy logics by Neosperience Cloud.

In particular, services are developed with Serverless technology on stack NodeJS and benefit from the support of AWS Lambda and APIGateway to guarantee the accesses' scalability and security.

The orchestration of the different components is carried out through the use of AWS Step Functions. Nudging Gamification is provided as a SaaS service to Neosperience customers, and therefore, such logics are disguised by the REST endpoints exposed in the platform.

An easy customizable client web is also provided.

# SECURITY AND DATA PROCESSING

Data about customers are encrypted both in transit and inside the persistence. In particular, both Kinesis streams and MongoDB collections are encrypted, allowing an end-to-end security of the data relating to the players. Every player has a unique ID that, however, qualifies him only inside the Gamification micro-services.

# INTEGRATIONS WITH THIRD PARTIES

Following the API-first approach by Neosperience Cloud, Nudging Gamification is easily integrable inside third parties systems such as the SaaS. service, safely used thanks to the strong OAuth2 authentication. The support for authentication according to the Basic Authentication workflow allows to use machine-to-machine credentials, therefore specially suited when the client is a web service instead of a console user.

In case of special requirements or need of a tight integration with third parties systems, it is possible to obtain access to Nudging Gamification through an ad-hoc deploy inside an AWS account dedicated to the client and to the project, where every change and extension required will be made.