



EVA 2014 Florence

Conference

[r][e]

NeoLuoghi

Solution For Cultural Experience In Places of Elective Supermodernity

F. Spadoni¹, R. Rossi¹,

F. Tariffi²

¹ Rigel Engineering S.r.l.

² Space S.p.A.

Florence, May 8th 2014



[rigel][engineering]



The Project NeoLuoghi



- **Solution For Cultural Experience In Places of Elective Supermodernity**
- **Started in September 2012, 36 months, 6 M€ italian project, with 8 partners :**
 - Space S.p.A. (*Coordinator*)
 - *Rigel Engineering S.r.l.*
 - *Gruppo Meta*
 - *CNR Napoli*
 - *Università di Salerno*
 - *Officina Rambaldi*
 - *Politecnica*
 - *L'isola dei ragazzi*
- **Co-financed by the MIUR (Italian Research Minister)**
 - PON Research and Competitiveness program
 - addressed to Cultural initiatives.



investiamo nel vostro futuro

A new paradigm for fruition of the cultural space and cognitive mediation in theme parks

- the project starts from the observation of the need for a new approach to cultural heritage and for a more participatory and immersive experience.
 - modern visitors are now more reluctant to pre-configured paths and simple captions typical of traditional cultural communication,
 - they are more interested in a tourism of discovery and identification in historical mythological and identity contexts.
- to address such new requirements, the project proposes
 - and new cultural offer realized both in physical locations (town centers, battlefields, archaeological sites) and in new structures such as cultural theme parks.
 - the creation of coordinated solutions for the design, management and development of these new fruition contexts, represented by *implicit* theme parks (urban centers) and *explicit* (artificial parks with cultural theme),
- theme parks are widely intended as *neo-places* of cultural experience (narrative and sympathetic museums, equipped urban areas or real experiential theme parks),
 - *neo-places* (neoluoghi in Italian) as opposed to Marc Augé's *non-places*
 - *non-places* (Marc Augé, 1995) are places of transience that do not hold enough significance to be regarded as *places* (e.g. a mall, a motorway, a hotel room or an airport)

NeoLuoghi objectives



- **To define methodologies and tools to operate at multiple levels on the neo-places of cultural experience, to:**
 - understand, raise, design and create content,
 - provide infrastructure and advanced services of "ambient intelligence",
 - make them sustainable and functional to strategies for territorial development.
- **To develop innovative applications based on**
 - emerging mobile and wearable devices (e.g. Heads-Up Displays, like Google Glass), allowing:
 - access to related information and content, included multimedia and augmented reality,
 - completing the experience of the cultural neo-place,
 - social networking and *gamification* supplementing the visiting experience:
 - end users share knowledge and experiences (visit recommendations)
 - in a collaborative or competitive style (e.g. geo-based social games, prizes competitions).
- **Target users and application scenario**
 - expert guide editors or theme-park designers willing to easily build engaging user experiences
 - end users accessing the content during cultural and theme-park visits using mobile devices

NeoLuoghi methodology (1/3)



- **Major aspects considered**

- **perception of cultural systems**, both historicized and recognized, both potential and achievable through initiatives of cultural engineering,
- visual, spatial and functional **architecture** of the experiential systems,
 - socio-cultural research aimed to investigate the mechanisms by which the contemporary sensibility perceive cultural systems,
- experiential systems and ambient intelligence (internet of things),
 - technical aspect aiming to transform theme parks into “smart” places in which information is handled and distributed efficiently, improving visitor experience,
- experiential marketing of services for the enhancement of territories and cultural resources (**social marketing**),
 - socio-economic skills that will underpin a growing role of the NeoLuoghi offering value-added services in Italy and in particular in the southern regions
- new **development strategies** for cultural experiential systems,
 - a socio-economic analysis to estimate at multiple levels the economic impact of the investment.

NeoLuoghi methodology (2/3)



- **Key concepts**

- **Mythopoesis** is a narrative genre in modern literature and film where a fictional mythology is created by the writer of prose or other fiction,
 - authors in this genre integrate traditional mythological themes and archetypes into fiction
- **Narratology** refers to both the theory and the study of narrative and narrative structure and the ways that these affect our perception,
- a themed place is evaluated for its **imaginative efficiency**, i.e. the ability to immerse users in a fabula conducted personally by the visitor
 - enabling to identify and effectively evoke a pervasive and imaginative world, which identifies the Park (implicitly or explicitly) and the experience that is able to transfer to those who visit and live it,

- **Our approach is oriented to**

- rationalize and model the process of elaboration of the *experiential script* of a themed place,
 - while keeping the process the most repeatable and reusable in new contexts,
- define a method for the **analysis** (identification, classification, evaluation) of the *pervasive themes* that run through contemporary society, as opportunities for thematic representation and identification.
- For each of the possible *driving themes*, the project provides a methodology for the **narratological development** in a specific imaginative context
 - what needs to be said and lived, in what order and with what stylistic features,
 - with which relationship between the self and the environment, in what structures congenial to elective socializing.

NeoLuoghi methodology (3/3)



- **Design and tale of the NeoLuoghi**

- methodological classification and *industrialization* of the creative processes for the development of themed and experiential entertainment systems.
- the aim is to rethink the processes of visual ideation and spatial composition on the one hand, and of synthesis between architectural and exhibition set up on the other:
 - **from** processes which are customized, intuitive, creative, and cultural in the deepest sense,
 - **to** organized knowledge that can effectively support the work of those who design, enrich and organizes themed urban spaces and immersive theme parks
 - **by** extrapolating the constants, rules, strategies, conduct and reference model in the domain.
- to this aim, the project addressed the following research aspects:
 - the **imagery** in the park, namely the key elements of style and visual image, of symbolic and descriptive scenery that translate the deep script of the themed space in its organization and visual communication;
 - the **spatial narrative** of the park, in the relationship between the plain narrative of a cultural story-myth and the ways in which a system of aesthetic suggestions spatially unfolds: his **proxemics** (i.e. the logical organization of the spatial dimension in which the user interacts), the fundamental architecture of the space, and the theatrical dramatization of space;
 - the models for construction and urban design, selection and implementation of urban and didactic apparatus (**implicit parks**, i.e. historic urban centers), the creation of architectural artifacts and the set up of exhibition spaces in real theme parks.

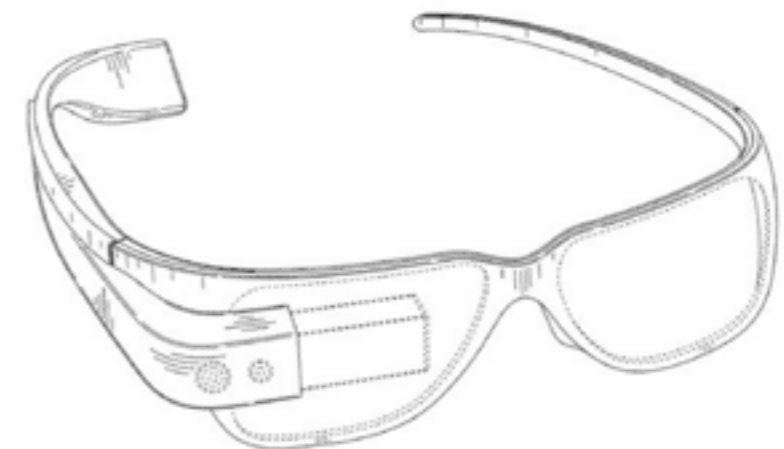
User experience in NeoLuoghi



- **Preliminary work** on the analysis of users behavior in cultural spaces (**SmartCirty** project) and in multi platform mobile applications in a cultural access scenario (project **MarcoPolo**):
 - literature on visitor studies, to identify any behavioral patterns of use in cultural places,
 - user experience and behavioral patterns for tourism fruition, to devise use cases modeling:
 - interactions between users and explanatory/additional content
 - interactions between users and portable information devices used to access the content
 - behaviors of different categories of users in the cultural spaces, both indoor and open-air
 - digital content to be delivered through mobile devices
 - identifying relationships between such cultural content and mobile device users (tablets and smartphones) during the cultural experience
- the challenge is to deliver an **immersive yet unobtrusive user experience**,
 - leveraging advanced mobile devices (tablets or Heads Up Displays),
 - where a native application smartly displays required content provided by web applications
- the strategy is to regard cultural neo-places as themed systems with a high density of information, leveraging integrated solutions to
 - evoke, perform, transmit, manage and customize projective and evocative messages
 - create an effective **ambient intelligence** functional to the experiential mission

NeoLuoghi enabling technologies

- **Augmented Reality**
 - 3D reconstruction (e.g. of monuments)
- **Heads-up displays**
 - *cards* and *timeline* paradigm (i.e. GoogleNow)
- **Multiplatform mobile application development**
 - domain and application logic are really decoupled
- **Social Interaction and multi user environment**
 - user profiling
 - content and visits recommendations
 - geo social networks



Social networking in NeoLuoghi (1/2)



- **Smart content delivery, by**
 - modulation of information in line with the users and their characteristics and mission
 - through profiling techniques for dynamic narrative content generation (*storytelling*),
 - enriching visitors experiences in the park, either implicitly or explicitly, through:
 - techniques for creating multiple points of interest in the urban fabric and in the park (*smartspotting*),
 - augmented reality solutions to create a more immersive and emotional viewing experience,
 - solutions to manage **social and emotional interactions** enabling a cooperative and engaging experience of the park, implemented through the **NeoLuoghi Social Network (NL-SN)**.
- The **NL-SN** is a tourist **geo-localized SN** (similar to *Foursquare*) allowing visitors of the theme park to access mechanisms of social interaction *during the narrative development* of the visit, and provides:
 - access to competitive and collaborative discovery games,
 - ability to post photos and comments and to discover visitors with similar interests whom to meet during the experience,
 - recommendations on points of interest (POI), by profiling visitors on the basis of:
 - their behavior during the visit,
 - their social interactions in the NL-SN,
 - present and past behaviors of visitors in **external SN** (e.g. Foursquare, Twitter, TripAdvisor).

Social networking in NeoLuoghi (2/2)

• Social Network analysis

- data on user activities on SN (SN data) is collected, after requiring proper authorization:
 - directly from the NL-SN system or.
 - extracted by crawling third parties SN through their native Application Programming Interfaces (API) or through SN aggregators, such as Gnip, LoginRadius or Hootsuite),
- SN data is normalized and associated to the user profile in order to complete it with SN aspects.
- complete user profile is used as input to **recommendation algorithms** for the definition of content and POI recommendations.
- social aspects of user profile, originated from
 - external sources (other SN, social sections of external non social websites, e.g. Amazon)
 - the NL-SN itself.

In addition the social connectivity system :

- provides simple recommendations concerning the activities of the user on the SN (social recommendations):
 - advise on people geographically close or mission-related to meet and share the park experience and
 - recommendation about common activities of interest, such as the presence of events or games in the area
- collects recommendations originated by external SN and forward them to the user



Conclusions and future work



- **NeoLuoghi is addressing a new paradigm of fruition of the cultural space and cognitive mediation in theme parks**
 - an innovative methodology and advanced technologies for modeling the process of elaboration of the *experiential script* of a themed place,
 - while keeping the process the most repeatable and reusable in new contexts.
- **The first part of the research was dedicated to**
 - investigate the mechanisms by which the contemporary sensibility perceive cultural systems
 - adopt key enabling technologies to transform theme parks into smart places in which information is handled and distributed efficiently, improving visitor experience,
 - design social connectivity mechanism to provide specialized recommendations while maintaining an unobtrusive and immersive user experience focusing on the visit.
- **Next steps in the project are ...**
 - finalize a system architecture integrating the different system components
 - design and implement the user interface of the tablet application for content fruition.
 - evaluate the system with real users, in real cultural scenarios in Naples.

NeoLuoghi ...



Thank you for your attention !

www.neoluoghi.it



investiamo nel vostro futuro

[r][e]



Applicazione di fruizione, social connectivity

Fruizione e social connectivity

- . Studio di modelli di interazione sociale peer-to-peer integrati nelle dinamiche fruibili dei sistemi di parco tematico
- . Definizione di uno scenario di impiego
- . Analisi delle modalità di coinvolgimento (meccanismi di gratifica e gioco di ruolo multi-utente on-line)
- . Definizione e consolidamento **architettura del modulo di SN** e contributo alla definizione dell'architettura del sistema NL
- . Sottomissione di articolo scientifico alla conferenza internazionale "EVA Florence 2014", Electronic Images and Visual Arts, Firenze 7 e 8 Maggio 2014.
 - Sarà presentato all'interno della sessione "Access to the culture information".



Architettura del modulo di SN > **Funzionalità**

- . gestire il SN di NeoLuoghi, SN turistico **geolocalizzato** (simile a Foursquare)
 - meccanismi di interazione sociale (raccomandazioni ed incontro con altri visitatori)
 - engagement e **gamification** (gioco competitivo/collaborativo e gratifiche)
- . registrare comportamenti del visitatore nel SN di NL e nei principali SN (*dati social*)
 - recuperati tramite rispettive API
 - recuperati tramite **aggregatori** di Social Network (ad es. gnip, LoginRadius o Hootsuite)
- . normalizzare i dati social (formati e significati diversi) e renderli disponibili (tramite REST) per il **Profiler**
 - serviranno al Recommender per la definizione delle raccomandazioni (*racc. pure*)
- . elaborare raccomandazioni relative ai SN (*racc. social*) e renderle disponibili al **UI Storytelling Player**
 - trovare persone vicine/affini per incontri e condivisione
 - trovare attività comuni di interesse, come la presenza di un evento/gioco nella zona
- . raccogliere le raccomandazioni dai Social Network esterni e renderle disponibili al modulo **UI Storytelling Player**
 - saranno visualizzati dal Player opportunamente (ad es. tramite lista scorrevole laterale non intrusiva)

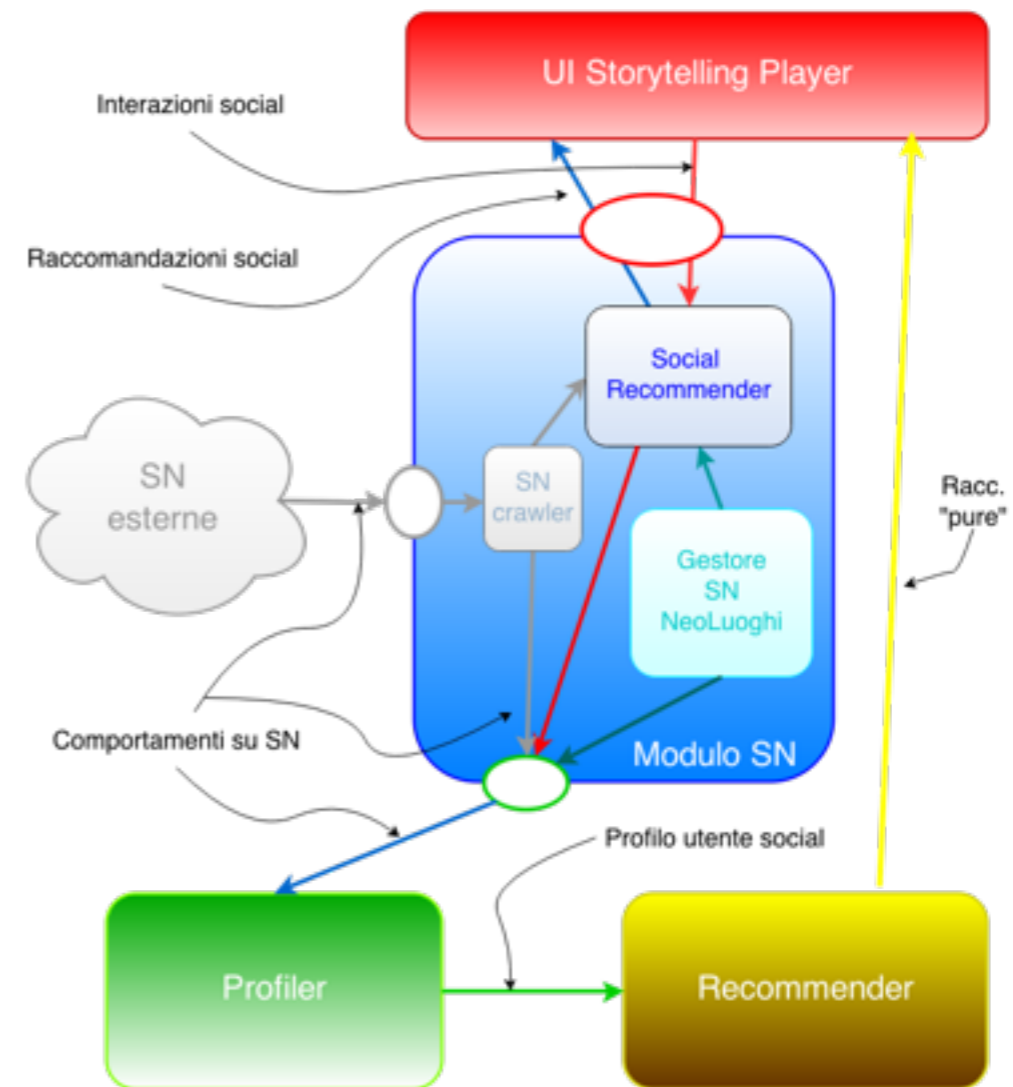
Architettura del modulo di SN > Interazioni

Interazioni con sottosistemi NL

- . da **Social Network esterni**: *dati social* utili alla comprensione dei comportamenti dell'utente e quindi al completamento del profilo,
- . a **Profiler**, *dati social* raccolti, per completare ed affinare il profilo utente con questo aspetto,
- . a/da **UI Storytelling Player** (interazione bidirezionale):
 - invio *raccomandazioni social*
 - ricezione comportamenti dell'utente durante la visita, riferibili ad aspetti *social*

cerchio/ellisse: interfacce con sottosistemi e/o esterno

freccette orientate colorate: flussi informativi, stesso colore del sottosistema che origina i dati (dal punto di vista logico)



Architettura del modulo di SN > Sottocomponenti



Sottocomponenti del modulo SN

- . **SN crawler**, recupera i dati disponibili dai SN esterni per i quali l'utente si è connesso, normalizza e rende questi disponibili in un formato universale al Profiler.
- . **Gestore del Social Network di NeoLuoghi**, implementa una rete sociale georeferenziata (**Geo SN, location-based social service**, focus su posizione geografica dell'utente, dei suoi pari e dei POI).
- . **Sistema di raccomandazioni social**, fornisce semplici raccomandazioni relative ai SN, partendo dalla posizione geografica dell'utente, sulla base di semplici criteri di similarità:
 - utenti "vicini" (posizionati in un raggio predefinito rispetto all'utente che riceve la raccomandazione)
 - lista di POI visitati o valutati come preferiti (liked, recensiti con voto "alto", ecc.) da utenti "affini" (cioè con interessi simili)