IDN-Travel: touristic data production and reuse beyond walled gardens

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Social networks today

• The widespread of social network revealed with unprecedented relevance the Internet users interest in creating and sharing multimedia content
Social networks and tourism

• The tourism sector is one of those areas in which sharing of user-generated content is of broad interest
Travel in USA: 2009

- Spending: $759 Billions
- Employment: 7.4 Million Jobs
- 79% of travelers planned their trip using Internet

Sources:
http://poweroftravel.org/
Traveler’s use of the internet
Walled gardens services

• These services are “walled gardens”:
  – They manage the resources in a context dependent way and don’t allow data reuse

Source: Tim Berners Lee, WWW Conference 2009
Walled gardens services

- At best they allow the use of mash-ups
Issues

• These services have several issues:
  – They ensure features such as privacy and permission management only within the specific application domain
  – The security management is entrusted entirely to the service provider
  – They focus on the application and not on the data, limiting the possibility of data reuse
Our objectives

• Satisfy users’ needs:
  – Allow the user to manage resources that are easily sharable, reusable, beyond walled gardens
  – Give to the user the possibility to affect to the content properties such as privacy, permission management, licensing, provenance, persistency, versioning
  – Strategies to increase collaboration and then reuse, in order to decouple the information artifact from the application and make it independent
Our solution: IDN architecture

• The solution we propose is to avail of the services of the InterDataNet (IDN) infrastructural architecture

• To demonstrate the viability of our solution, we present the IDN-Travel application case study and prototype: it’s an application for helping users to store in the cloud and share with other users their personal travel information
IDN-Travel

- It is a telematics solution based on the InterDataNet infrastructure
InterDataNet

User Oriented Collaborative Information
Structured Information
Elementary Information

IDN-Travel
Virtual Resource
Information History
Replica Management
Storage Interface

HTTP REST
Characteristics of the proposed solution (1)

• The IDN Document creates complex information through:
  – the aggregation and correlation of IDN Nodes
  – the addition of properties related to the collection itself, such as the author and so on

• The capabilities provided by the specific IDN Node are determined directly by the owner of that node
  – An IDN Node may have a read-only policy for anyone, and r/w access for authorized users
Characteristics of the proposed solution (2)

• When a Node becomes part of an IDN Document, the management policy of the Node within the document is determined by the Document itself, taking into account of any constraints imposed by the Node itself.

• The data itself establishes its visualization policy inside of the application and therefore the presence or absence of functions and interface tools used to edit data, delete it, etc...
To mash or not to mash?

• The IDN Architecture:
  – Is a mash-up (it works as a mashup)
  – It’s not a mash-up (it use different criteria)

• In fact, mash-ups requires:
  – An agreement between the parties, or
  – The use of API specifications

• In IDN data itself establishes its visualization policy. This is possible, using:
  – CRUD operations (GET, POST, PUT, DELETE)
  – Content negotiation
Advantages of our approach

• It is possible to cross the walled garden by using the IDN Node that
  – The IDN Document may be partly inside a walled garden and partly not
• The reuse of data is facilitated
• Every single IDN Node can be safely reused within any other application that meets those requirements
The template

http://www.idntravel.com/travels

comments

report

partecipants

itinerary

comments

{destination}

{partecipant}

{user}

{location}

photos

{photo}

comments

{comment}
Web application prototype

Palermo

Cattedrale

La Cattedrale di Palermo, dedicata alla Vergine Maria Santissima Assunta in cielo, è un grandioso complesso architettonico composto in diversi stili, dovuti alle varie fasi di costruzione. Eretta nel 1185 dall'arcivescovo Gualtiero Offanania sull'area della prima basilica che i Saraceni avevano trasformato in moschea, ha subito nel corso dei secoli vari rimaneggiamenti; tuttavia è stato alla fine del Settecento, quando, in occasione del consolidamento strutturale, si rifece radicalmente l'interno su progetto di Ferdinando Fuga...

Cappella Palatina

La Cappella Palatina si trova a Palermo, all'interno del Palazzo dei Normanni; è una basilica a tre navate dedicata ai santi Pietro e Paolo. Fu fatta costruire per volere di Ruggero II e venne consacrata il 28 aprile 1140 come chiesa della famiglia reale...
Web application prototype

From another website

From Wikipedia

From Wikipedia
Mobile application prototype

Palermo
Travel made from 2011/01/06 to 2011/01/10

Photo Gallery

Comments
Thomas wrote: You made a beauty travel. I think the cathedral of Palermo is really extraordinary. You found a very hot weather, even though it was winter.

Vote the trip

Show report
Conclusions

• We proposed the IDN-Travel application, in order to help users to manage their digital memories concerning trips

• Through the use of an IDN Document, each item has specific attributes, handled directly by the infrastructure
  – The traditional services can manage mash-up of data whose they know the type
  – The IDN-Travel application can show all the resources that can be retrieved with an HTTP GET method
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