Smart Tourism and the competitive destination of the future

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NEW REALITIES IN TOURISM NEED INNOVATIVE STRATEGIES
An Increasing Number of Connected And Sophisticated Devices Will Become Available

50Bn of connected devices in 2020

- Connected TV
- E-book
- Connected car
- Videogame console
- GPS Navigator
- E-fitness
- Gesture sensor
- Media center
- Tablet
- Telemetry
- Digital Signage
- Telespresence
- Remote surveillance
- Residential Gateway
- Domotic
- Digital Table
We Are Facing A Digital Revolution That Will Radically Change Industries
Gartner's 2014 Hype Cycle for Emerging Technologies Maps the Journey to Digital Business
Smartness takes advantage of interconnectivity and interoperability of integrated technologies to reengineer processes and data in order to produce innovative services, products and procedures towards maximising value for all stakeholders.

This reengineering enables shaping products, actions, processes and services in real-time, by engaging different stakeholders simultaneously to optimise the collective performance and competitiveness and generate agile solutions and value for all involved in the value system.

Smartness is the glue of interoperable, interconnected and mutually beneficial systems and stakeholders and provides the infostructure for the value creation for all.
BIG CITIES

SMART CITIES

BIG DATA
http://www.192021.org/

19 cities in the world with 20 million people in the 21st century
of these cities will be chosen as case studies exploring the impact of this population phenomenon
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Urban management infrastructure

- Equipment management
- Operational information
- Analysis and simulation

Data center

IT

Study

Research, university

Live

Commerce

Retailer

Financial institution

Building

Public facility

Residence

School

Hospital

Hotel

Factory

Recycling facility

Energy station

Railway station

Work

Industry

Agriculture, fisheries

Travel

Logistics

Tourism, leisure

Energy

New energy

Gas

Aviation

Shipping

Railways

Roads

Mobility

Batteries

Large central power source

Energy

Water

Sewage treatment

Water treatment

Industrial wastewater treatment

Communications

Internet

Broadcasting

Telephony

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WHAT MAKES CITIES SMART?

**Aggregate & Gather Data**
- Data gathered in real-time or near real-time from a variety of sources (sensors, mobile devices, social media, etc)
- Data is communicated and transported via pervasive broadband networks

**Discover & Analyze Information**
- Software & services used to process, understand and display collected data
- Trends discovered and/or outcomes predicted using BI/analytics and predictive analytics

**Plan & Execute Optimal Response**
- Processes are in place to act on information, execute an optimal response, and measure outcomes
- Optimal response leads to more sustainable development, and better citizen quality of life

**Enabling Factors:**
- Government leadership
- Engaged citizens
- Technology infrastructure
- Private public partnerships

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Thinking smart for life - SENSORS

THINKING SMART
Digital intelligence is the key to making life safer and more efficient. At Intel Labs, engineers create ingenious ways to build high-tech, connected devices into everyday items to help you make smarter decisions.

SMART HOMES
The Near Future
Living a seamlessly connected lifestyle isn’t as far off as you would think: Intel chips can be placed virtually anywhere, from human skin to a running shoe.

1. Intelligent dishes and silverware that determine dietary needs.

2. Connected with wireless displays at home.

3. Connected with wireless mobile displays.

SAFER DRIVING
Intelligent street lighting in Helsinki, Finland, uses automatic sensors to dim or brighten depending on environmental conditions.

4. Predictive mapping to calculate road safety.

5. Vehicle sensors that transfer inter-car data about position and velocity.

SUSTAINABLE LIVING
How does data fusion work for cities? The combination of fixed, mobile and voluntary sensors allows to get larger impactful insights and services, such as traffic management.

1. Voluntary mobile sensing
Participants volunteer to sense the environment with external devices like phones.

2. Fixed sensing sensors are used to collect data on environmental elements.

3. Opportunistic mobile sensing
The system uses an external device to collect information.

Source: Urban population growth (World Health Observatory); Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update 2012-17; Intel data

50 billion
Expected number of connected devices by 2020. That’s an average of six devices per person!

70%
Mobile traffic growth in 2012.

36 million
The number of connected tablets in 2012.

200% increase
The expected growth in five years for the smart home market.

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From SMART CITIES to SMART TOURISM

Based on Smart Cities research and methodologies, a Smart Tourism Destination successfully implements smartness at destination to enhance tourism value.

Smartness is fostered by open innovation, supported by investments in human and social capital, and sustained by participatory governance, in order to develop the collective competitiveness of tourism destinations to enhance social, economic and environmental prosperity for all stakeholders and generate value for visitors.

Interoperability and ubiquitous computing ensure that everybody is interconnected and processes are integrated towards generating value, through dynamic co-creation, sustainable resources and dynamic personalisation and adaptation to context.

All suppliers and intermediaries, the public sector, as well as consumers and various interested parties are networked, dynamically co-producing value for everybody interconnected in the ecosystem.
Smart Tourism Destination

Demand and supply add value

Resources

Smart Tourism Destination

Value for all Stakeholders

Supply
- Attractions
- Accessibility
- Amenities
- Activities
- Available Packages
- Ancillary Services

Demand
- Leisure Tourists
- Business Tourists
- Event Tourists
- Cultural Tourists
- Pleasure Tourists
- Other Tourists

Tourists
- Leisure Service
- Local residents
Smart destinations towards enhanced tourism experience

- **Tourism Experience**
- **Tourism Destination Competitiveness**
- **Smart Tourism Destination**
  - Activities, Amenities, Accessibility, Attractions, Available Packages, Ancillary Services
- **Smart City**
  - Smart Mobility, Smart Living, Smart People, Smart Government, Smart Economy, Smart Environment

**Soft Smartness**
- Innovation, Human & Social Capital, Leadership
  - Living Labs, collaboration, co-creation, participatory governance, creative & knowledgeable people

**Hard Smartness**
- Software, Netware, Hardware
  - Sensors, NFC, WiFi, M2M, applications, edge computing
Smart personalised experiences

Smart Technology for Personalized Experiences

Traditional: Experience Creation (B2C)

New: Dynamic Service Encounter (E2C) Experience Creation

Tourism Company:
Connected Departments & Individual Employees

Tourist Consumer

Smart Mobile Technology Platform

RT Synchronisation

Real-time Information Update

Tourism Employee

Personal Encounter

Tourist Consumer

Personalised Experience

Traditional: A-Priori Information Collection (C2B)

Requirements
Information Aggregation
Ubiquitous Connectedness
Real time Synchronization

Experience Hierarchy

4. Technology-Empowered Experience
   - Interactive, immersive, pervasive technology - empowered experience

3. Technology-Enhanced Experience
   - Interactive Web 2.0 technology - enhanced experience

2. Technology-Assisted Experience
   - Non-interactive Web 1.0 technology - assisted experience

1. Conventional Experience
   - Low technology - staged experience

Figure 3. Experience hierarchy
Figure 2. Experience typology matrix: linking technology and co-creation.
Smart Destinations

- Flow Management: sensors and apps
- Traffic situation: IoT (internet of things)
- Traffic Info through Apps
- Parking places
- Tourism for All. Apps for handicapped people
Smart Destinations

- Video-guides
- Geo localised touristic routes
- Promotion of touristic resources of the destination
- Full historic immersion through Smart Optics devices (oculus)
Groups include consumers participating in at least one of the indicated activities at least monthly.

- Creators 24%
  - Publish a blog
  - Publish your own Web pages
  - Upload video you created
  - Upload audio/music you created
  - Write articles or stories and post them

- Conversationalists 33%
  - Update status on a social networking site*
  - Post updates on Twitter*

- Critics 37%
  - Post ratings/reviews of products or services
  - Comment on someone else’s blog
  - Contribute to online forums
  - Contribute to/edit articles in a wiki

- Collectors 20%
  - Use RSS feeds
  - Vote for Web sites online
  - Add “tags” to Web pages or photos

- Joiners 59%
  - Maintain profile on a social networking site
  - Visit social networking sites

- Spectators 70%
  - Read blogs
  - Listen to podcasts
  - Watch video from other users
  - Read online forums
  - Read customer ratings/reviews
  - Read tweets

- Inactives 17%
  - None of the above

Source: Forrester Research, Inc
SMART TOURISM is NOT about technology

It is about agility
Dear Mr/Ms Professor Buhails,

Welcome to Hangzhou Blossom Water Museum Hotel!!

That you want to speak tomorrow, in order to better protect your throat is specially prepared for you a candy.

Room Attendant
THE FUTURE?
John Ngavi, 27 married to Megan Ngavi

Twitter
15 mins ago
It’s been a hard day’s night but I’ve finally finished the big document for work. Now off to the local cafe for a relaxing lunch.

Facebook
Works at: 20fourLabs
Does: Product Manager
Don’t Mention: Politics, ABBA

Movies: Star Wars, LOTR, District 9
Music: Vampire Weekend, Final Fantasy, Sufjan Stevens

Google Mentions
Positive
Negative

Common Friends
Justine Thompson, Keletso Tshune, Jessica Aaron, Peter Brown

Future of Social Networking with Augmented Reality
Concept investigation by Matthew Buckland (matthewbuckland.com) and Philip Langley (@royalalien) of 20fourlabs.com
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