FROM Personalised Environments, Personalised Service Spectrums and Personal Informatics ...

TO Frontierism, Holographic Laptops and EMOWEAR...

38th Affiliate Members
Plenary Session

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Professor Luiz Moutinho
Professor of BioMarketing and Futures Research
DCU Business School, Dublin City University, Ireland

2016
TOURISM Responding to New Social Drivers

Essential social drivers
• individualisation,
• flexibility and
• the ageing of society will fundamentally change social relations.

• Patchwork-families,
• single households,
• serial partnerships and jobs will replace traditional structures... and change how people holiday, with whom and when.

• So called flex-jobs,
• business colonies and
• project-oriented engagements will replace traditional full time jobs.

The average age of retirement will be 70.

All of this will affect the ‘new customer’ in the ageing Europe.
Who Will Be Tomorrow’s Tourist?

- Fluid identity.
- Educated, multicultured and knowledgeable.
- Sixth sense.
- Heighten sense of personal freedom.
- Liberal.
- Experimentalist.
- Volatile.
- Paradox of choice
- Awkward.
- Citizen attitude.
- Discretionary Thrift.
- Simplicity. Simple experiences.
Frontierism

explore
Budget Air Travel
In 10 Years:

Windowless Planes Will Give Passengers a Panoramic View of the Sky. OLED screens along the plane’s length will show passengers the world outside.

(http://www.boredpanda.com/windowless-airplane-oled-touchscreen-walls-cpi/)
... by 2050:

Panoramic Passenger Windows Applied to Transport Aircraft

Professor Luiz Moutinho
Professor of BioMarketing and Futures Research
Dublin City University, DCU Business School, Ireland
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Future of Transport
Challenge of the More Demanding and Unpredictable Consumer

- “What you do” more important than “where you do it”: “Experiences”, not “destinations,” count.

- Authenticity: travel – savvy visitors expect more than earlier generations.

- Fly in on Ryanair, stay in a Hilton, grab lunch in McDonalds: no neat segments.
Unique Experience:
E.g. Dinner in the Sky
Hotel Categorisation May Need to Evolve...
To Focus More on Service Than Facilities
"WHY do you want to go?" or "HOW would you like to spend your holidays?"

Today there is increasing emphasis on what you want, expect and need from holidays – and how you can give back to the destination and people who live there for your experience.

At this time "why" and "how" will become much more important. Travel in the future will therefore have a greater, more profound meaning – and not just for us, but also for destinations and the people who live there. This kind of travel will be called “Profound Travel”.
Human Values and Trends in Tourism

- Eco Chic
- Tech-Free Travel & Digital Detox
- Multigenerational Travel
- Framilies
- Communal Leisure
Making INTEGRATION Happen

Project Aims To Replace Billboards With Wi-Fi-Enabled Bamboo Gardens

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Dublin City University, DCU Business School, Ireland
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Solar Power, Geothermal Well, Eco-rooms
Crowne Plaza Copenhagen Towers

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... It’s All about E3...
The Future of Tourism and Travel is about \textit{EMOTION}
The Future of Tourism... is about...

EMOTION, EXPERIENCE, EXCHANGE RATES
The Perfect Touch

- You do not have to get up close and personal with a tourist to leave a lasting impression – every time you brush their consciousness, you will leave the mark.

- Every aspect of tourist interaction must be scrutinised. Each moment of the customer experience must be dissected, analysed and improved, improved, improved...

- Tourist’s experience is about what you DO... NOT what you say you do!
TECNOLOGIES & INNOVATIONS
Influencing Tourism
Changes to Tourism Brought by TECHNOLOGY

- Transformation in the tourism experience
- New business models hand in hand with the collaborative economy
- Personalisation processes
Futuristic State-of-the-Art: Dublin Tourist Information Office

Professor Luiz Moutinho
Professor of BioMarketing and Futures Research
Dublin City University, DCU Business School, Ireland
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Integrate **SUSTAINABILITY**

Criteria and indicators for measurement, assessment and **real inclusion in management using technological solutions**

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**Professor Luiz Moutinho**  
Professor of BioMarketing and Futures Research  
Dublin City University, DCU Business School, Ireland  
2016
Personal Informatics

Hybridisation of the digital and the physical (“blending”).

- Records of people in interactions (intentional or implicit), enable to quantify behaviours and create new indicators.

- These digital traces lead to lots of opportunities:
  - detailed analysis of tourists experience (marketing & evaluation tool)
  - create tourist activity/infrastructures accordingly
  - design real-time information applications for tourists.

- Both for tourists, services providers and public bodies.
INTELLIGENCE is a capacity for...

- learning and adapting,
- understanding our society,
- combining knowledge and interacting to achieve objectives in a wide variety of environments.
Biologically Inspired Intelligence

NEW SOCIAL MEDIA INTELLIGENCE TOOLS

- To learn the meaning and context of data in a way that is similar to humans. Called “Biologically inspired intelligence”. Machine learning, useful for understanding complex, unstructured information.

- Application Programming Interface (API) for building learning machines. Adaptive holosemantic data space with semiotic capabilities. Sense-making capabilities for semantic discovery, lightweight anthologies, knowledge collaboration, sentiment analysis, AI and data mining. “Topic-Mapper”.
Personalised Environments

The proliferation of sensors, data and automation are creating reactive environments that can sense anything from weather patterns to user behaviour and automatically adapt the space and service experience.
The Future of Tourism through New Technologies

- Augmented Reality (AR)
- Touchwalls
- eMotion Walls
- Sensor Tiles
- Interaction for new user experiences
- Natural language
- Real-time translation
- Green technologies
- Usage of 3D
- New user interfaces
- H-C interaction
- Travel guide communication

- Biometrics
- Voice prints
- Voice recognition
- Facial coding
- Communicating objects
- Interactive electronic papers
- RFID
- VR
- NFC
- Fingertip
- Eye scan
- DNA scan
- QR codes... ... ...
Digital Innovation Taking Place

Vilnius Touring Tablets

Touch Screen Maps

Best Connected cities in Europe - Vilnius (1st), Kaunas (2nd)

Vilnius – Fastest internet worldwide
86% agreed that by 2020, personalization will have been embraced wholeheartedly by the sector and that ‘customers will have the ability to choose the size of room, type of bed, amenities, audio-visual facilities, business equipment, etc. on booking and pay accordingly’. 
The FUTURE???
Terminator Salvation...

Scientists at the University of Washington have been developing a **contact lens** containing one built-in LED, powered wirelessly with radio frequency waves, facial recognition systems etc.
Future Travel Tools
TECH That Can Assist...

- From the use of RFID to the use of pyroelectric infrared sensors combined with digital cameras to document visitor use patterns

- Major advantages of infrared digital cameras include the portability of the technique, low cost, digital data format and the discrimination of user types.
Trends in Tourism Marketing RESEARCH
Trends in Tourism Marketing Research

- VR simulations
- Unstructured data (discussion forums, multimedia-sharing sites, digital megaphones, Internet “chat” software)
- Individual-level data
- Internet-based “Marketing-Research Agents” (MRAs)
- “Intelligent Data-Interpretation Agents”
- Live Data – DBS, RFID, GPS, GSM
**WEARABLE MOTION SENSORS**

Small, comfortable, and low-cost accelerometer devices... can be easily worn for days or weeks and used to collect data on what tourists are doing.

MIT algorithms have been developed to automatically detect specific activities, such as walking, moderate physical activity, and body posture.

In combination with a mobile computing device (e.g. PDA or phone), the sensors can be used to detect specific activities of a person in real-time and provide or collect context-specific information.
Technological Change: SENSORS...

... and your (smart)phone is, of course, a sensor
Portable Place-Based Research Tools

- **Context-aware experience sampling.**
  Software has been developed for standard pocket PCs to acquire data and context specific feedback from tourists. Sensors may be used to trigger questions and data capture. For instance, the computer can monitor biometrics like the heart rate and ask questions based upon variation in heart rates itself.

- **Tape-on sensor kit.**
  MIT algorithms can also be used to study data and automatically detect certain tourist activities in real-time. The tape-on sensors can be used with computing devices such as computers, phones, or PDAs to develop and test technology that automatically present information based upon a tourist’s activities.
Public Data & Urban Sensors

... so, end up with plenty of data sources:

public database (sensor, weather, pollution), personal objects that report about their status, “traces” generated by people activity (international traces, photo on flickr, background information: the music people listen to on itunes, the books checked on Amazon...)

Flickr pictures
Spatial coordinates
Movements

Phone (GPS/ cell-id, camera, mp3, web browsing...)
CAPTURING PEOPLE’S EMOTIONS & Tourism’s Future
(Tourist) Human Sensing

Innovative technology helps to:

- ... continuously obtain the pulse of the tourist.

- ... to understand your tourist not only from the outside, but also getting tourist from the inside, to capture their real feelings for what they want, expect and experience in real-time!...

- ...to create, design and deliver emotional experiences that go beyond mere simple tourist satisfaction...
By Scanning Your Face, Computers Can Decode Tourist's Unspoken Reaction to... Everything!
EMOWEAR Project ...

... the conception and development... of a wearable tech garment that would record human emotions

Has many different applications ranging from...

- health monitoring,
- consumer behaviour permissible “shadowing” in, for example,
- tourism environments,
- sports viewing and attendance

... as well as other possible contextual realms.
Wearable Technology

wearables ★ fashionable technology ★ wearable devices ★ tech togs ★ fashion electronics ... are clothing and accessories incorporating computer and advanced electronic technologies.

Wearable devices - a good example of the Internet of Things - a part of the network of physical objects or "things" embedded with

- electronics,
- software,
- sensors and
- connectivity

to enable objects to exchange data with a tourism organisation, tourism operator and/or other connected devices, without requiring human intervention.
EMOWEAR Project - Platform 1
Data Mining BIOSIGNALS - Biodata

Measurings - based on biodata (sensing from heart beat, pulse, degree of sweating, palm dorsa, etc.):

- **vital signals**
  E.g. monitor heart rate and ask questions based upon detected variation.

- **physiological data** - measure subconscious behaviour.
  E.g. electrical skin conductance through the moisture released by the sweat glands controlled by the sympathetic nervous system... To measure the person’s psychological state of arousal (positive and negative excitement... e.g. to chart the influence of tourism events on a person).

SW has been developed for standard PocketPC, e.g. to acquire data and context-specific feedback from people which could be in a tourism-related environment.
Data Mining BIOSIGNALS – Locationcasting / Mobilecasting...

... via wireless motion sensors, low-cost accelerometers, etc. ... tape-on sensor kit (can detect on-off, open-closed, and object movements)

- Location-based detection, activity monitoring and physical sensing.
- Context-aware experience sampling.

MIT algorithms and SW for standard PocketPC / phone / computer / PDAs...

- to acquire data and context-specific feedback from people, which also could be in a tourism-related environment
- to develop and test technology that automatically presents information based upon a person’s tourism activities.

- Sensors may be used to trigger questions and data capture.
Facial Action Coding System (FACS) –
- taxonomise human facial movements
by their appearance on the face.

The concept:
we reveal our emotions by our facial expressions.
Particularly in some social settings, we may seek to conceal these, but the underlying emotion we experience still registers on our face, even as a brief micro-expression.

FACS was based on combinations of 43 unique facial muscle positions which yielded thousands of expressions.
(Paul Ekman and Wallace Friesen created the Facial Action Coding System - FACS. Published in 1978.)
EMOWEAR Project - Platform 4

**EYE-TRACKING**

Measures either the **point of gaze** (where one is looking) or the **motion of an eye relative to the head**.

- Pupils constrict. Measures eye activity i.e. visual attention/real-time eye movements.
- Explores the relationship between **visual attention and consumer behaviour in tourism**.
- Gaze tracking. Longest gazes...% of viewing time or particular tourism stimuli.
VOICE PITCH ANALYSIS AND HUMAN-COMPUTER INTERACTION (HCI).

Voice recognition - computational studies of emotion in speech.

E.g., it is possible to capture and analyse speech signals and elicit emotions from the signal data.

The purpose of the Voice Emotion Response: to give computers affect recognition abilities, ideally at a level which enables researchers to label the emotional states of other people.
EMOWEAR Project - Platform 6

EEG/NIRSIT LOCATED IN THE HOOD OF THE EMOWEAR GARMENT

We will try to launch a new biosignal measuring device (similar to those EEG headsets) that can measure brain waves, sweat, heart-beats, etc.

The difference is that the new gadget is:
- portable,
- small,
- that can be embedded into a hat.

Platform 6 ⇒ EEG combined with a device related to fNIRS - functional near-infrared spectroscopy and DOT - diffused optimal tomography called NIRSIT to be placed in the hood of the jacket.
Future of Tourism Marketing
Tourism Marketing Brouhaha

Brand Space, Audio Branding, Liquid Brands, Molecular Brands, Brand Activism, Brandcasting, Brand Anonymity/Invisibility, Brands’ Role Reversal

BioMarketing, Neuroscience, Biometrics and H-C Interface

Tourism Product Configuration, Planning, Detailability, Tourist Specific Pricing
Tourism Marketing... but NOT as You Know It...

PBM2, New Business EcoSystems, Strategic Agility, Stakeholder-driven metrics

M3, Media Atomisation, Lilliput Land, Liquid Media, Fragvergence, Transmedia Planning, Experience Planning, Gladvertising, Geofencing, Audio Advertising, New Metrics (CPIR, CPEA, CPT, etc)

Popup Retail and Carbon Footprint Restaurants and Hotels
No TWO people will connect to the tourism brand in the same way, for the same reasons, through the same story on via the same channels...

Transmedia Storytelling Planning

Liquid Media

“Don’t be set in one form, think it, design it, develop it, adapt it, let it grow. Be like liquid.”
Transmedia Planning

► Extending narratives across media platforms
► Narrative continuity across multiple platforms
► Creation of original storylines for new platforms
► Entertainment content
► MeMedia
Gladvertising

- Advertisements that adapt to people’s moods (Gladverts)
- Emotion Recognition Software (ERS) – H-C-Interface technology
- A system which can work out a person’s
  - gender,
  - estimate their age, and serve up adverts that suit to that demographic profile (NEC-Japan)
Experimentation is the New Planning

Let’s be honest:
You have no idea what’s going to happen to the tourism industry. That’s why you build your organisation into an engine of possibility.

Technology is chaotic.
It affects every industry, often in ways that are difficult (if not impossible) to anticipate.

So, what is needed is... an evolving portfolio of strategic experiments.

Emergent strategy is an organic approach to growth that lets tourism companies learn and continually develop new strategies over time based on an ongoing culture of hypothesis and experimentation.
... and Simple, Universal

FINAL REMARKS
“I travel because life is short and the world is huge.”

Stephanie B.

tripadvisor®
Dream it.
Wish it.
Do it.