



## WalkOnWeb: paths to a new publishing model

Bert Paepen  
Katholieke Universiteit Leuven  
Maarten van Steenbergem  
Lannoo Publishers

3/5/2006

WalkOnWeb: your digital guide for walking in Europe

---

---

---

---

---

---

---

---



## Contents

1. WalkOnWeb: the project
2. Project starting points
3. How can the modern hiker operate today?
4. Current shortcomings for the modern hiker
5. Towards a new publishing model...  
Opportunities and challenges in the fields of:
  - Digital walking and tourist content
  - Technology
  - Applications
  - Commercial framework
6. Walking in the 21st century: future vision

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 1. WalkOnWeb: the project

- "Your digital guide for walking in Europe"
- European research project
  - 1 October 2004 - 31 March 2007
- Programme:
  - IST-FP6
  - Cross-media content for leisure and entertainment
- Partners:
  - K.U.Leuven (B) - Cure (A) - Luciad (B) - Moviquity (E) - FFRandonnée (F) - IGN (F) - Vakantiegenoegens (B) - Lannoo (B)
- Remark: walking = potentially any type of recreational route information

3/5/2006

WalkOnWeb

---

---

---

---

---

---

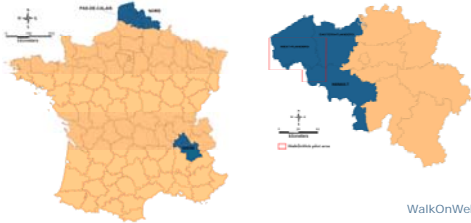
---

---



## 1. WalkOnWeb: the project

- Current status: application development
  - Finishes end 2006
  - User testing September and November 2006
- Demonstrator in 2 test regions BE-FR



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 2. Project starting points

- Any of these sounds familiar?
  - It's Saturday evening. My wife gets the idea to go walking on Sunday.
    - 4-hour walk in surroundings of Spa
    - we don't have maps or books
    - Where can we get information?
  - We are walking with a walking guide through the woods
    - at a crossing all marks are gone: left or right?
    - book's description unclear, map not detailed enough

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 2. Project starting points

- Any of these sounds familiar?
  - Santa Clause brought me a new GPS device
    - detailed maps of Belgium
    - built-in compass
    - But: how do I know what places are nice to visit, what walks are beautiful?
  - We are planning a 7-day hiking trip to Crete
    - no decent maps available
    - only guidebook is in German
    - We want to hike in the opposite direction of the guidebook!

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



### 3. How can the modern hiker operate today?

- Hikers can use a combination of information sources
  - detailed maps: paper, cd-rom
  - trail descriptions: guides, websites
  - GPX tracks for GPS
- GPS = Revolution!
  - Traditional tools (maps, compasses) only do one thing. The user navigates himself.
  - Mobile GPS-driven devices can do all these functions at once. The device 'navigates' the user.

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



### 3. How can the modern hiker operate today?

#### Note: Do walkers use technology?

(Results from user research: 600 respondents)

- Almost 90% visits walking websites
- 18% owns a GPS device (often only for car navigation)
- Do they trust a digital hiking device?: 52%
- Heavy users (30 respondents):
  - 55% uses GPS device
  - 0,08% uses a PDA with GPS add-on
  - 0,04 uses mobile phone with GPS add-on

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



### 3. How can the modern hiker operate today?

#### Note: Do walkers use technology?

- Popularity of cartographic software: Topomap (IGN-Garmin), Carto Exploreur (Bayo),...
- New GPS devices are launched regularly
- Trends such as geocaching

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



### 3. How can the modern hiker operate today?

Case: Topographic dvd-roms (NGI-Lannoo)



- Draw routes on NGI/IGN topographic maps
- Browse through tourist information (more than 1,600 points of interest)
- Print route or export track to GPS
- Export map and route to PDA (pocket pc)

Commercially successful!

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



### 4. Current shortcomings for the modern hiker

- Books and paper maps have disadvantages
  - Not flexible: easily outdated, information is not customised, buy whole book, one language, one direction
- Traditional tools can still not be fully replaced by electronic tools
  - GPS devices allow limited navigation
    - Location on map
    - Show course of trail
    - No turn-by-turn navigation on topographic maps
    - Almost no semantic information
    - No additional information (e.g. legend about a tree)
  - Poor overview on digital map
    - Paper maps combine overview with detail (↔ GPS)

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



### 4. Current shortcomings for the modern hiker

- Usefulness GPS devices completely depends on availability
  - of digital map information
  - of digital, qualitative routing information
- Routing information not flexible
  - often derived from paper publications
  - Not yet flexible (e.g. you cannot compose your walk, reverse your walk etc.)
- Reliability GPS?
  - Battery life
  - GPS reception
- Devices not always user-friendly

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

- more flexibility for hikers
  - digital mapping for GPS devices & other mobile applications
  - digital routing information
  - turn-by-turn navigation
  - customizable content
  - more online updating
- cost-efficient and user-friendly content creation platform
- collect and integrate data from different sources

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Digital walking and tourist content

- Opportunities for publishers:
  - Streamline process of authoring walks (authoring tool)
  - Improve flexibility of route directions (uniform and unambiguous terminology)
  - Facilitate reusability of structured information
  - Deliver more systematic and centralised updating

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Digital walking and tourist content

- Opportunities for publishers:
  - Create cross-medial/multi-channel publications (paper, web, mobile devices)
  - Create multi-language publications
  - Create on-demand, personalised publications

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Digital walking and tourist content

- Challenges for publishers:
  - Produce media-neutral content (suitable for web, paper, mobile devices)
  - Manage multi-authorship (copyright issues)
  - Manage the new concept of permanent 'updating'
  - Manage copyright protection: effective protection vs. user-friendliness
  - Manage costs and workload !!!!
  - Compensate emotional value of paper guide

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Technology

- Integrate content from distributed information sources
  - Types: maps, navigation instructions, narrative texts, pictures, points of interest,...
  - Central information structure integrates data from different providers
    - Publishing in multiple ways and formats
    - Language and direction independent authoring
  - Ontologies
    - Walk- & navigation ontology
    - Topo ontology

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---

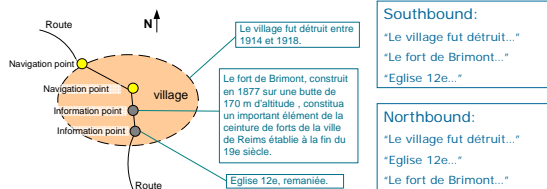


## 5. Towards a new publishing model

### Technology

How do we structure a route?

- "Atomic" information units
  - Flexible content "packaging"
- Fine-grained structure
  - Detailed localisation



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

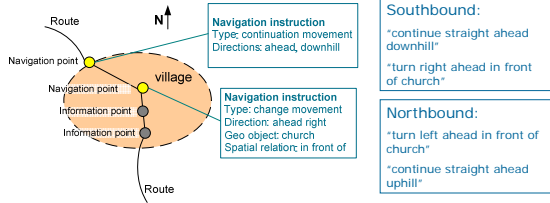
---



## 5. Towards a new publishing model Technology

How do we structure a route?

- Standardised vocabulary
  - Walk- and navigation ontology



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

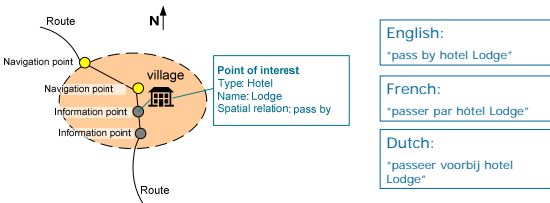
---



## 5. Towards a new publishing model Technology

How do we structure a route?

- Ontology based links
  - Links with *meaning*



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model Technology

• How do we structure a route?

- Separation between
  - Geo-spatial information
  - Content related information
- Route = independent from map
- Network of interconnected paths
- Author creates walk on this network
  - Content enrichment

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---

**5. Towards a new publishing model**  
Technology

Walk Paths network

Map

3/5/2006 WalkOnWeb

---

---

---

---

---

---

---

---

**5. Towards a new publishing model**  
Technology

- Mobile devices
  - Rich map interfaces
    - SVG
    - Maps in vector-based format
  - Secure data exchange
- Semantic interoperability between vector maps: topo-ontology
  - Link types of map objects between different maps
    - E.g. "fleuve" in French vs. "rivier" in Belgian map
  - Separate data and cartographic rendering
    - Country-dependent rendering
    - E.g. French user can see Belgian topographic way in French way and with French legend
  - Route linked to ontology concepts

3/5/2006 WalkOnWeb

---

---

---

---

---

---

---

---

**5. Towards a new publishing model**  
Applications supporting this model

- Walk Planner
  - Website
  - Search for walks, compose your own walk, download to mobile device, print
  - "my walks" online library
- Mobile Hiking Assistant
  - Walking guide on mobile device
  - Turn-by-turn navigation, POIs, texts, pictures
- Authoring Tool
  - Application for authors to create and maintain walks
  - Standardised authoring: language independent
  - Mobile authoring

3/5/2006 WalkOnWeb

---

---

---

---

---

---

---

---





## 5. Towards a new publishing model Applications supporting this model – Walk Planner



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

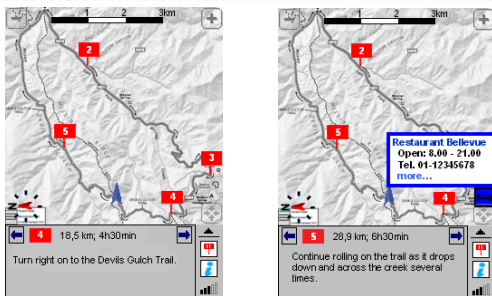
---

---

---



## 5. Towards a new publishing model Applications supporting this model – Mobile Hiking Assistant



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

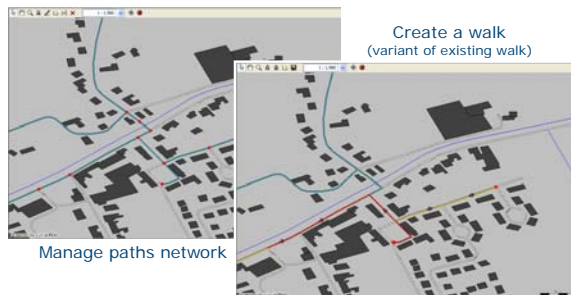
---

---

---



## 5. Towards a new publishing model Applications supporting this model – Authoring Tool



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Commercial framework

- Opportunities:
  - Product innovation and diversification
  - Create add-ons for traditional books or maps with new functionalities
  - Create multifunctional content, easy to edit and maintain.
  - Content usable on a website, print on paper or export to a mobile device ...
  - Create language independent route information
    - edit in one language, publish in multiple languages

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Commercial framework

- Challenges:
  - Create new marketing strategies (how to get these applications top of mind?)
  - Create new sales strategies for online content (do people want to pay?)
  - Implement new payment methods
  - Size of potential market?
  - Time of the market to become grown-up?
  - Manage copyright issues in a multi-author environment
  - Create a viable commercial model

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Commercial framework

- Commercial test cases: selling walks online (downloadable in PDF-format)

[www.lannoowandelen.be](http://www.lannoowandelen.be)

[www.ffrandonnee.fr](http://www.ffrandonnee.fr)



3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---



## 5. Towards a new publishing model

### Commercial framework

- Investigate:
  - User's reaction
  - Pricing schemes
  - Payment models:
    - Pay per walk
    - Credits
  - Payment methods:
    - Credit card payment
    - Telephone/internet billing
  - Some preliminary results

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---



## 6. Walking in the 21st century

### future vision

- 'Reason not the need' (King Lear)
- Transitional process:
  - from niche to a larger audience
  - from high end applications with multiple possibilities to general applications with basic functionalities
    - some 'future' examples
- Time span is unpredictable
- Integration into existing hardware devices is a key factor to reach a larger audience
- Intelligent cross medial publishing is the key for publishers to sustain costs and workload
- Content gathering on a structured basis is essential for whatever end products are going to be realised
- Cooperation between all players on the market will be essential
  - Content providers
  - Application and technology providers
  - User related organisations

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---



## Project contact details

- Project director:
  - Prof. Dr. Jan Engelen, [jan\\_engelen@esat.kuleuven.be](mailto:jan_engelen@esat.kuleuven.be)
  - Phone: +32 16 32 11 23
  - Bert Paepen, [bert.paepen@esat.kuleuven.be](mailto:bert.paepen@esat.kuleuven.be)
  - Phone: +32 16 32 18 66
- Technical director:
  - Karel Maesen, [karel.maesen@sadl.kuleuven.be](mailto:karel.maesen@sadl.kuleuven.be)
  - Phone: +32 16 32 97 29
- Project office:
  - Kasteelpark Arenberg 10, B-3001 Leuven, Belgium
  - Fax: +32 16 32 85 39
- E-mail: [info@walkonweb.org](mailto:info@walkonweb.org)
- Web: [www.walkonweb.org](http://www.walkonweb.org)
  - > Subscribe to the WalkOnWeb newsletter!

3/5/2006

WalkOnWeb

---

---

---

---

---

---

---

---

---

---