Information and Communication Technologies in Tourism
ICTs for Tourism Destination Management

- **ICT Usage by Destination Organisations**
  - Case Study ETS Portal System
  - Case Study Tiscover
  - Further Destination related Case Studies
Destinations

- **Characteristics of Tourism Destinations**
  - Satisfy the need for travelling
  - **Amalgam** of products, facilities & services that comprise the ‘total tourism product’
  - Bring together a number of tangible elements & attractions, intangible aspects & facilities/services
  - Planning, management & marketing are undertaken by public sector or partnerships between stakeholders of the local tourism industry
  - Need to disseminate information globally as destination-naive travellers require more information

- **Management & Marketing Objectives**
  - Ensure sustainable balance between economic benefits and socio-cultural and environmental costs
Destination Management Organisations

- Destination Management Organisations - DMOs
  - Destination management & marketing
  - Promote a destination's tourism by maintaining the social, cultural, economic and environmental basis (political function)
  - Represent all suppliers in a democratic way
  - Training and education
  - Supporting SME structured tourism industry
  - Often governmental institutions
  - Paid by tourism related taxes
  - Implemented as hierarchical network (NTO, RTO, LTO)
ICT and Destinations

- Destination management systems (DMSs)
  - A collection of computerised, interactively accessible information about a destination
  - Satisfy the information & reservation needs of buyers
  - Support travellers to create a personalised destination experience
  - Major promotion, distribution & operational tools for SMTEs & destinations
  - Improve the functions & performance of DMOs
  - Provide the essential info-structure for DMOs
  - Support destinations in strengthening their competitiveness
Tourism Distribution via DMOs & DMSs

Tourism distribution mechanisms and the role of DMOs and DMSs

Buhalis (2003)
DMSs within the Distribution Network
Methodology for DMS Development

- Prepare an eTourism destination strategy
- Develop a strategic overview, brand, look and feel of the destination offering
- Determine functional specifications & business model of the DMS
- Establish technical specifications, procurement and update programme
- Select system suppliers and/or software developers
- Organise the data collection and input to content management tools
- Build, pilot and test the DMS and the web site
- Host and maintain the DMS and the various sites
- Register the site with search engines and maintain ranking
- Provide analysis of users and their usage of the site
- Develop feedback mechanisms
- Establish long-term strategy and account for technological upgrades
- Monitor, evaluate and review process regularly
Critical Issues for DMSs

- Accessible through the Internet & mobile devices
- Establish the destination info-structure through computerisation & networking of the entire population of enterprises at destinations
- Be interoperable with a wide range of technological platforms
- Conform to latest standards and flexibility
- Represent the entire destination itinerary
- Disseminate information about everything related to a destination
- Act as a neutral network at the destination level that enables industry to act & co-ordinate its actions proactively & reactively
Destiny development

+ Visitors

+ Destn Attractiveness

- Destn Development

+ Natural Resource Attractiveness

+ Tourism Enterprise Attractiveness

+ Tourism Income

+ Tourism Enterprise Development

(McGrath/More 2005)
Strategic Destination Management

Destination development

(McGrath/More 2005)
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ETS Portal System

- **ETS Framework**
  - *Freely configurable* booking platform for tourism products
  - Enables searching and reservation/booking of tourism products
  - Serves as basis for *instantiating* different theme or region specific portals
  - *Administration cockpit* enables the *configuration* of specific portals as instances of the framework
  - Current applications
    - Region portals Altmühlta, Fränkisches Seenland, Donau-Ries
    - Theme portals „historische Häuser“ or „Urlaub auf dem Bauernhof“ in Bayern
System Architecture

ETS portal system

Portal specific database

Central database

Theme portal
Region portal
Administration
Application Adaptation

- Data request
  - e.g. search for accommodation unit
  - Adaptation to portal configuration (e.g. volume of data, size of pictures)
    - Portal specific configuration
  - Content transformation
    - Intermediate format
Application Adaptation

Browser response

Based on:
- Configuration
- Style sheets

Portal specific configuration

Intermediate format

Design generation

XHtml
Database Design

General database schema

- Bookable units (rooms, tours, etc.)
- Suppliers
- Prices
- Availability / booking restrictions
- Bookings
- Description / attributes
- Portal assignments
ETC Administration

- Portal administration
  - Functions, design
- Customer administration
  - Products
- System administration
  - Basic data etc.
Usage of ETS Portal System

Theme / region portals

Web services
(e.g. booking via XML)

External modules
(e.g. room plan)

ETS portal system
ICTs for Tourism Destination Management

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Objective

- Build an infrastructure for improving the service of the industry and for enforcing their co-operation
- Enable a better, faster and more democratic presentation of the product
- Provide an improved access to the market, delivering also information about the market and its trends

Functions

- Destination information server
  - Database structure for destinations with an Internet interface
- Reservation/booking server (rooms/packages)
  - Including a EPS - electronic payment system
- Data maintenance server
  - Including property management system for SMEs
  - Extranet function for the “content management system”
- Internet presence for accommodations and destinations
Experience Winter in Tirol

Experience Winter at Haus Achenseerain in Fiss. Skiing and life at their best! You will be delighted by our unparalleled skiing and breathtaking surroundings at the Serfaus-Fiss-Ladis Ski Area. Three nights' lodging plus 2-day lift tickets start from Euro 124.00 per person.
Austria

Please select your preferences. Fields marked with an * are required fields.

Region/City and travel period

Area/Resort*  Oesterreich  choose regions

Check In*  15 Nov 2006

Approximate Length of Stay*  7 Nights

Select Room Type

1  (All)  * for 2  * Adults and 0  Children Aged

0  (All)  * for 2  * Adults and 0  Children Aged
Datacenter - overview

Internet

1st Level: Webserver-Cluster-Groups

2nd Level: Application-Server-Cluster-Groups

Redundant Cisco PIX Firewalls

Redundant Cisco 7206 Routers

Service-Clusters: Mail, FTP, mySQL-DB, etc

SAN (Storage Area Network): Enterprise Storage for NFS and Database-Clusters, being expanded for use with Service-Clusters

SUN /Oracle Database-Cluster

NFS-Cluster

Service-Clusters: Mail, FTP, mySQL-DB, etc

Redundant Firewall- / Load Balancer-Cluster
Datacenter - overview

Tiscover Web-application

J2EE Web-application

Oracle DB SunFire6800 SF1
Oracle DB SunFire4800 SF2
NFS-Cluster

HP EVA 5000 SAN
Hardware & OSs

- **Sun Microsystems mid-range servers – database servers**
  - Sun Fire 4800/6800 (main systems)
    - Up to 12/24 Ultra Sparc CPUs
    - Redundant components (power, system controllers, ...)
    - Redundant I/O boxes on Sun Fire 6800
  - Sun Fire 280 (testing system, 2 CPUs)
  - Sun Solaris operating system
- **Standard x86 servers (Hewlett Packard)**
  - 11/05: SUN X4100
    - Web/application/search/cache/load balancing/file/NFS/fax gateway/mail servers, backup systems
    - Red Hat enterprise linux on most servers, Windows 2003 for route planner servers
- **Storage / SAN**
  - HP EVA 5000 as main storage system
  - HP HSG-80 / MSA-8000 for logs and non-critical apps
Java Architecture
Tiscover Web-application – Guide Request

http://www.tiscover.at/at/guide/5,en,SCH1/objectId,RGN7at,season,at1,selectedEntry,home/home.html

Frontline Server
SL LB: UrlRewrite.analyseUrl(URL request)
at → Country System Austria
guide → Module and Application GUIDE (stateless)

Which Application?

Which Application-Server?
17:05:36 CEST 2005 TSLB:1267:ok:3:629
17:05:36 CEST 2005 TSLB:1131:ok:2:266
17:05:36 CEST 2005 TSLB:1289:startUp:0:65
17:05:36 CEST 2005 TSLB:1089:ok:0:8

1131
Squid
J2EE Application-Server
DB
Java Architecture

Tiscover Web-Application – Scout Request

http://book.tiscover.at/at/scout/stps/5.en,SCH1,202/lm,false,r,RGN7at,season,at1/rscr it.html

Which Application?

Frontline Server

SL LB: UrlRewrite.analyseUrl(URL request)
at → Country System Austria
scout/stps → Module Scout and Application stps (statefull)

Which Application-Server?

Machineld: 1202 → if machine.isAlive()

1202

Squid

J2EE Application-Server

DB
Java Architecture

- **Java figures**
  - WAR file – 60 MB
  - App. 4300 java classes
    - App. 500 DAO’s, 2100 business classes, 200 servlets
    - 5 root servlets
  - Ca. 4700 jsp’s
  - Ca. 720 tables
    - 15 GB data – (AT system, historical data)
    - 10 GB log files (current time for 3 month)
    - 20 GB statistic data
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Case Study – Destination Organizations

Why destination marketing providers need to think more like Google, Apple and Facebook


The current DMO technology-pricing model is killing the sector and making destination marketers increasingly irrelevant.
Case Study – Destination Organizations

Why Pinterest works in the travel industry (ESPECIALLY destinations)


www.pinterest.com

Why has Pinterest the potential to be the most important social strategy component for destination marketers…?
Case Study – Destination Organizations

Destination app to give kids a voice in travel planning process


http://boundround.com/

Sydney is the first destination to feature on the service, being developed by Bound Round, which will also include stories, photos, videos and games as well as enable children to put together a journal of their trip.
Case Study – Destination Organizations

How Quebec City Crowdsources Locals To Promote Its Destination


Quebec City Tourism Bureau unveiled a campaign in order to generate some buzz about the destination. The idea is to encourage locals to promote the destination via social media networks.

http://effetquebec.com/
Case Study – Destination Organizations

Helsinki Offline Tourist Map - Android Apps on Google Play


A Helsinki tourist map for your Android phone and tablet.

Explore Helsinki without data connection charges.
How a tourism board made its visitor centre look and feel like an Apple Store


Manchester’s Tourist information center distinct from the traditional visitor centre with a few dusty leaflets, outdated maps on the walls and staff that looked bored rigid by the entire experience!
Case Study – Destination Organizations

TAT’s “Creative Tourism” campaign generates 24 million online visitors


“Discover the Other You” prompts TAT’s “online competition designed to promote the kingdom as a “Creative Tourism” destination.
Visit Idaho campaign lets public star in their own destination video


http://visitidaho.org/

The Idaho Division of Tourism is clearly looking for the viral effect with its unveiling of a marketing campaign where punters paste their photos into one of three videos.