Location-based Learning: Where Are You Learning Today?

Key Findings from Recent Ambient Insight Research

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Ambient Insight, LLC
Agenda

- Introductions and Agenda
- Research Taxonomy and Product Definitions
- Market Overview and Key Findings from Ambient Insight Research
- Who’s Buying Location-based Learning and Why?
- Simple to Sophisticated: Product Types & Examples
Ambient Insight is an integrity-based market research firm that uses predictive analytics to identify revenue opportunities for suppliers.

- Ambient Insight founded in 2004 by Microsoft Training and Certification veterans
- International “boutique” analysis firm specializing in quantitative analysis, learning technology forecasts, M&A analysis, and competitive intelligence
- Ambient Insight...
  - Does not evaluate, compare, or rank the effectiveness of learning technology products
  - *Does not endorse or promote companies or products*
Ambient Insight’s Research Taxonomy
Ambient Insight’s Learning Technology Research Taxonomy

Eight Buyer Segments

- Consumer
- PreK-12
- Higher Education
- Corporations and Businesses
- Federal Government
- State and Local Government
- Associations, NGOs, and Non-Profits
- Healthcare

Buy Eight Types of Pedagogically-defined Learning Products

- Self-paced eLearning Courseware
- Digital Video, Text, & Audio Reference
- Test Prep & Exam Products
- Collaboration-based Learning
- Social Learning
- Simulation & Game-based Learning
- Cognitive Learning
- Mobile Learning

From Four Types of Suppliers

- Packaged Content
- Custom Content Services
- Software as a Service (SaaS)
- Tools and Installed Technology
Ambient Insight’s Learning Technology Research Taxonomy

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Consumer  PreK-12  Higher Education  Corporations and Businesses  Federal Government  State and Local Government  Associations, NGOs, and Non-Profits  Healthcare

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Ambient Insight’s Definition of Mobile Learning Products and Services

Ambient Insight defines Mobile Learning as **knowledge transfer events, content, tools, and applications** accessed on handheld computing devices.

### Mobile Learning Products

- **Handheld decision support and performance support**
  - Content development tools
    - Installed platforms
      - Social Learning
    - Technology services
      - Content services
- **Location-based Learning Services**
- **Device-embedded Learning**
  - Packaged content

Ambient Insight identifies three native types of Mobile Learning: Handheld Decision Support, **Location-based Learning**, and Device-embedded Learning.
Ambient Insight 2011

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Ambient Insight identifies three native types of Mobile Learning: **Handheld Decision Support, Location-based Learning**, and Device-embedded Learning.

Source: GlobalMotion
Definitions

Location-based Learning is based on location-based services (LBS) technology. It is a type of knowledge transfer enabled by sensors responding to the actions of a user at a specific location in space and time to create a situated learning experience...

Mobile Augmented Reality utilizes images, schematics, audio, multimedia, historical context, location data, and other forms of content overlaid on real-world objects that are manipulated by users holding a mobile device.

Ambient Insight's Research Taxonomy
Market Overview & Key Findings from Ambient Insight Research
Location-based Learning Market is Growing

Location-based Learning (LBL) is in the “market creation” phase, which is characterized by modest revenues and strong growth.

- **Innovative products** leverage technology advances in location-based services (LBS) and social media.
- **Consumers** drive demand for packaged content; brands reach out to consumers.
- **New suppliers** join the market from other disciplines such as animation, multimedia, web design and web hosting.

5-year CAGR is 30%
A Perpetual “Perfect Storm” Drives the Adoption of Mobile Learning

- Rapid Evolution of Powerful Wireless Handheld Devices
- Growth of App Stores & Content Distribution Channels
- Large Growing Number of Buyers and Users
- Explosion of New Learning Content & Apps
- Growing Number of Native Mobile Learning Tools & Platforms
- Content Suppliers
- Technology Suppliers
- Service Suppliers

Global Mobile Learning Adoption

Ambient Insight 2011
US market for location-based learning is growing by 30.0% and revenues will reach $95.4 million by 2015

Consumers top buyers of content - five-year growth rate for location-based learning content is 51.5%

Corporations and government agencies top buyers of custom services

Apple filed Mobile Augmented Reality patent in mid-2009

Sony, Qualcomm, Nintendo major players

Mainstream tools, browsers, middleware, and platforms emerged between 2009-2010 including:

- Unifeye, Hoppala, Toura, Argon, Layar, SCVNGR, Wikitude ARchitect, and junaio

Number of location-based learning services suppliers tripled in last 2 years
Key Findings

- Major innovations now occurring in marketing and advertising industry
  
- **Location-based Learning** leverages technology advances of devices, GPS systems, and location-based services (LBS)
  
- Advances in **proximity marketing technologies** transfer to engaging location-based & augmented reality (AR) mobile learning experiences
  
- The “golden triangle” is: mobile, social, and real-time
  
- Established brands adapt existing content to engage new audiences
  
- **Privacy** concerns rising, legislation pending; suppliers need to be clear about explicit permissions for access to location data
  
- Business models vary: revenue generating, value-add, and brand.
Who’s Buying Location-based Learning and Why?
Who is Buying?

- Consumers, education, government, and nonprofits/associations are the primary buyers of Location-based Learning products and services.

- Each buyer segment has a different buying behavior and the nonprofit/association market is especially diverse.

- Consumer market includes tourism and guides, language learning, public safety, and edugames as well as some professional content.

Source: Word Lens
Different Buyers Adopt Different Types of Location-based Learning Content Products and Services

<table>
<thead>
<tr>
<th>Content Products</th>
<th>Types of Buyer/User</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corp</td>
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<tr>
<td>Language learning</td>
<td>✔ Yes</td>
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<tr>
<td>Travel &amp; tourism</td>
<td>✔ Yes</td>
</tr>
<tr>
<td>Education, study guides &amp; reference</td>
<td>✔ Yes</td>
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<tr>
<td>Sims &amp; game-based</td>
<td>✔ Yes</td>
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<tr>
<td>Handheld decision support</td>
<td>✔ Yes</td>
</tr>
<tr>
<td>Professional licensure, CE/CME</td>
<td>✔ Yes</td>
</tr>
</tbody>
</table>
Museums Strolls and Walking Tours

- Guide by Cell, Spotlight Mobile, Pocket-Proof (UK) are three brand leaders that produce museum and city tour guides

- GlobalMotion, creator of a GPS travel community and interactive trip-sharing service called EveryTrail, has partnered with Fodor, California State Parks Foundation, and retailer North Face

- The Tate Museum in London, American Museum of Natural History in New York, Los Angeles Museum of the Holocaust, San Francisco Museum of Modern Art... the list grows...
Consumer Demand Nurtures the Growth in Nature Apps and Suppliers Create New Content or Repurpose Existing Content

Hypertag uses proximity marketing technology to distribute multimedia content, independent of mobile phone networks.

Source: Audubon Society

“Animal Tracks” from MyNature featured by Apple “Apps for the Great Outdoors”

Source: MyNature – Tree Guide

Ambient Insight 2011
Non-profits, Corporations, and State Governments fund Nature-oriented Location-based Learning Apps

State agencies offer free or “Pro” versions of apps about their state parks – from Civil War history to hiking rails.

National Geographic’s location-based learning game for kids.

Nature Valley funded Moonshadow to create Nature Find app.
Simple to Sophisticated Mobile Learning Product Types and Examples

*High Tech to Low Tech*

*Smartphones to Feature Phones*
There are several generic tools, platforms, and browsers for mobile augmented reality products. Examples include SCVNGR, Argon, Toura, Unifeye, Layar, Junaio, Wikitude, and Hoppala Augmentation.

But there are tools designed specifically for location-based learning development:

- **University of Wisconsin’s ARIS**, open source educational game engine
- **Antenna’s** software tools for smartphone audio tours
- **Wikitude’s** new ARchitect Beta released in May 2011

**Toozla** offers a free tool to create self-guided AR audio tours (and they also create tours).
Many Simple Solutions Reach Feature Phones and Smartphones and Therefore a Wider Audience

Common Short Codes (CSC) and QR codes are inexpensive solutions for reaching out to members with timely information.

Red Cross Blood Services and LSN Mobile - text message alerts campaign on blood inventory levels, educational info about donating blood, and where.

Guide by Cell and Monterey Bay Aquarium – engagement opportunity: text “feeding” (5-digit code) to receive text alerts about unscheduled feedings and events.

Audio podcasts are still popular.
QR Codes Are Physical World Hyperlinks Connecting Location-based Info with Online Info via a Phone’s Camera

Unlike Japan, QR adoption has lagged in the US.

Augusta’s “Digitrail” - interpretation. Historic 19th century canal uses QR codes to link to mobile “produced view” web pages about wildlife (slider turtles & herons)

Seattle Center signage strives to educate visitors about QR codes and link to relevant information.

Location-based Learning Brings Content into Context for Education, Travel, and Tourism

**Frequency 1550** – GPS “City game” by Waag Society & IVKO for kids.

Visitors to national/state parks, cities, and museums, use Location-based Learning apps

**Next Bus** GPS & predictive software: real-time data is accurate “within 2 minutes 95% of the time.”

**Source:** Future Lab

**Source:** Spotlight Mobile

**Source:** Next Bus, Inc.

**Source:** Mazatlan, Mexico.
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Location-based Decision Support Apps Save Time for Field-based Workers

**DishPointer** augmented reality app enables installers or DIY enthusiasts to make decisions about line of sight issues and best satellites reception with an iPhone or Android phone.

**Mobile Epiphany**’s Touch Inspect is a media-enhanced, spatially intelligent, asset-centric field data collection and worker decision support app.
Product Cross-overs: Location-based Learning and Game-based Learning and Social Learning

Location-based Learning products often converge with other Mobile Learning product types, and cross from desktop to devices.

Clients for Urban Interactive’s urban augmented reality missions include: corporations, government, nonprofits, higher ed, and consumers.

Mentira is a mobile location-based, college level language learning, mobile mystery game from the University of New Mexico.
Augmented Reality (AR) Adds a Layer of Audio, Photos, Video, and/or Text Content to Location-based Apps

SPRXMobile’s Layar – “Augmented Reality Browser” has an app store

metaio’s junaio “recognizes the image and overlays dynamic data, true to position, scale and target group into the real world view of the camera.”

Mobilizy's Wikitude World Browser links GPS coordinates with Wikipedia's tens of thousands of geo-tagged entries

AcrossAir’s AR app to find “Nearest Tube”

Cyclopedia also ties into Wikipedia's geo-tagged entries
Mobile Augmented Reality – Delivers Out of This World Learning Experiences

Vito’s StarWalk educational app for iPhone and Windows Phone brings the night sky to the daytime

Distant Suns by First Light “Space travel for the rest of us” – from desktop to shirt pocket
Mobile AR Makes History Relevant by Coupling Place-based Learning with Time-based Learning

AR designers bring sights and sounds of the past to a present day location.

“Tankman,” a historical event via Layar tool.

Dow Days, an educational AR documentary from Univ. of Wisconsin, Madison.

Space and Time – Noho’s “Dublin City Walls” uses high resolution graphics, 3D imaging, video and GPS technology to bring medieval Dublin to life. Noho repurposed content from DVD and interactive materials they created for primary schools.
• Repurposing existing content increases the ROI for content development and engages user (and customers) with contextually-relevant information

• Generic tools, including AR tools, are readily available - some are free (Hoppala and Univ of Wisconsin, Madison)

• Brands (Macy’s, Post) are running extensive QR-education campaigns, increasing awareness; but consumer response to retail is not as great as to nonprofits

• Partnerships between associations and suppliers (e.g. Guide by Cell + American Public Gardens Associations) benefit both

• Business models vary from free, fee, “freemium,” ad-based, in-app purchasing; but less often by subscription

• SCVNGR launched a “daily deals” spinoff Level Up with better deals for customers and businesses.
• The US Market for Location-based Learning Products & Services: 2010-2015 Forecast and Analysis
• The US Market for Mobile Learning Products and Services: 2010-2015 Forecast and Analysis
• The US Market for Self-paced eLearning Products and Services: 2010-2015 Forecast and Analysis
• For news and tools information see Judy Brown’s mLearnopedia

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