

# Web 2.0 Applications for Improving Collaboration in Transport Planning

Andrew Nash

Vienna Transport Strategies

[www.andynash.com](http://www.andynash.com)

3 January 2010

# Presentation Outline

1. Introduction: What is Web 2.0?
2. Web 2.0 Transport Planning Applications
3. Recommendations for Web 2.0 Applications
4. Example Application Concepts
5. Questions and Comments

# 1. Introduction: What is Web 2.0?

- Web 2.0 is shorthand for Internet applications that rely on users to generate content and information.
- (Web 1.0 consists of websites without effective user input.)
- Web 2.0 applications are widely used in many fields but are only being gradually introduced in transport planning.

# Data?

- Data supply is the key issue for Web 2.0 application developers.
- ***Does your organization make its data easily available?***
- Good Examples:
  - Washington DC: Apps for Democracy
  - BART: Information for application developers

# Collaboration = Public Involvement 2.0

- Public involvement 1.0 = comments on expert-prepared documents ... but,
- Millions of brains are better at identifying problems and developing solutions than a few experts.
- Web 2.0 means that the public can actually *collaborate in the process of developing solutions* rather than simply commenting.
- A new model for transport planning and decisions?

***In summary, the goal of Web 2.0 collaboration tools is:***

***I'm from the public and I'm here to help.***

## 2. Categories of Web 2.0 Applications

- A. Information provision (wikis, mash-ups, personal sites, traditional agency websites),
- B. Planning and administration process (seeclickfix),
- C. Social networking (Facebook, LinkedIn), and
- D. Analysis and evaluation (cloud computing, games).

*The best Web 2.0 applications integrate all four categories into a single application.*

# wikis



- wiki = quick (Hawaiian)
- A wiki is a website that “anyone” can edit to add/delete information.
- Key benefit/ key problem: open-ness
- Solutions: administrators and editors



# mash-ups

- Combine data in new ways.
- Depend on open data provision.
- Extremely creative ideas (e.g. Washington DC Apps for Democracy)



<http://www.appsfordemocracy.org/>  
<http://outsideindc.com/stumblesafely>  
<http://www.walkscore.com>

# Personal Sites

- Enable anyone to share “information” by creating web pages or uploading data:
  - Blogging
  - YouTube - “Broadcast yourself”
  - Podcasts
- Many tools have been developed to help improve these: e.g. Google Maps, comments, ranking, etc.
- They have created unlimited possibilities for communications and information exchange.

# Traditional Informational Websites



- Traditional public agency information websites have been greatly improved with addition of Web 2.0 features: e.g.
- Information and data feeds for independent application developers.
- Public “involvement” e.g. flickr pools, videos etc.

## B. Planning & Administrative Process

- Planning and administrative process applications enable users to participate in the planning process via the Internet.
- The simplest example is using websites and e-mail to comment on planning studies.
- Note: this is not simply filling in forms, but helping to “improve” the administration process.

[www.seeclickfix.org](http://www.seeclickfix.org)



- Citizens identify, describe & map “non-emergency issues”;
- Others add information and ‘vote’ on importance;
- Goal: to generate action from responsible public agency;
- Founders believe that very few local governments have enough sophistication to run “functional” websites.

<http://cyclopath.org>



- Developed at the University of Minnesota for Twin Cities area.
- “Find bike routes that match the way you ride.”
- “Share your cycling knowledge with the community.”

www.pghwiki.org



- Using a wiki to develop an actual transportation plan.
- Developed by a citizens group in Pittsburgh.
- Shows that collaborative transport planning is possible, but difficult.
- Problems: funding, organization, good behavior, being taken seriously.

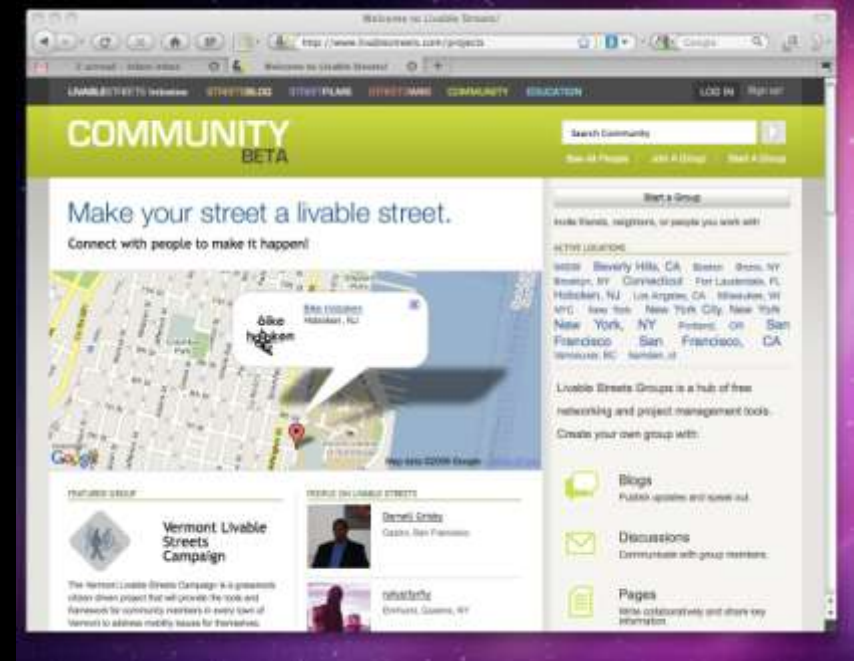
## C. Social Networking

- Perhaps the most well known Web 2.0 applications:
  - Facebook: 350 million members (December 2009);
  - LinkedIn, Xing: Professional networking.
  - Ning: website for creating social networking websites!
- Huge number of users, growing extremely quickly;
- Problem: people are unsure how to use these applications effectively (especially professionally)



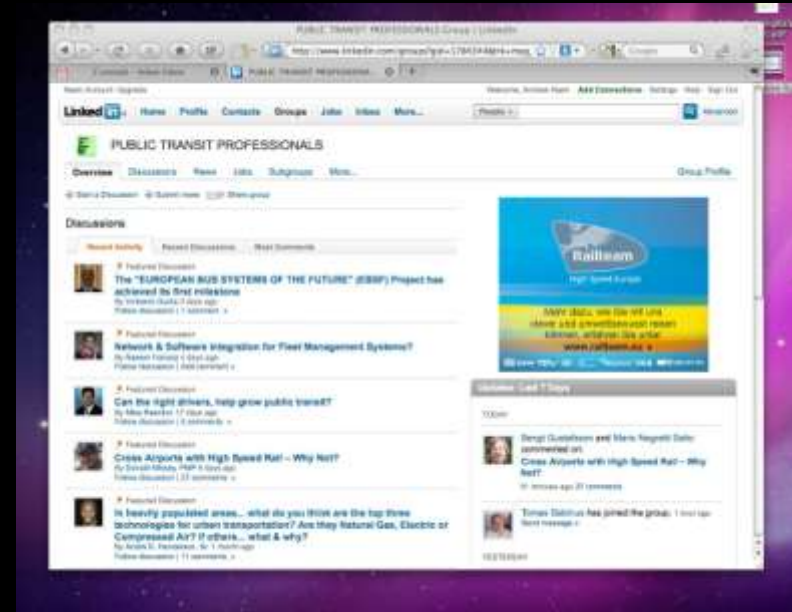


www.livablestreets.com



- Excellent example of integrated approach (wiki, community, blogs, and more).
- Advocacy organization with idealistic goals (pros & cons!).
- Key question: effectiveness.

www.linkedin.com



- Professional social networking website.
- Over 50 million members in over 200 countries; 450,000+ groups.
- Over 750 “transportation” groups.
- Key problem: group management and organization: who has time?

## D. Analysis and Evaluation

- “Cloud” based applications: programs not stored on personal computers:
  - Private: Salesforce.com (on-line customer relationship management system);
  - Open: XE.com (on-line currency rate calculations), Google documents, etc.
  - Games: multiplayer internet games;
  - Amazon’s Mechanical Turk: users paid to provide answers to other users ([www.mturk.com](http://www.mturk.com)).

## D. Analysis & Evaluation: Games

- Games can be used to:
  - Obtain information;
  - Generate ideas and feedback;
  - Educate users.
- The game “nature” encourages users to participate.
- This type of crowd-sourcing can be used for large-scale brainstorming.

# Gridlock Buster



- Online traffic control game developed by the Intelligent Transport Systems Institute at the University of Minnesota.
- Players control traffic and receive feedback based on vehicle delay and the length of traffic signal queues (standard traffic engineering).
- Educational application.
- <http://www.its.umn.edu/trafficcontrolgame/>

# Portland Metro: Build-a-system tool



- "The build-a-system tool lets you compare the transit corridors being evaluated by the project team. ... you can compare how each corridor performs and learn about the benefits and costs of the system you've created."
- Educational application (ridership, benefits, costs all from database).
- Incorporates outside applications (e.g. Google maps, walkscore.com).

# MetroQuest



- Web-based application that enables users to make choices and see the outcomes.
- Educational application (benefits, costs all from database).

# Sim City



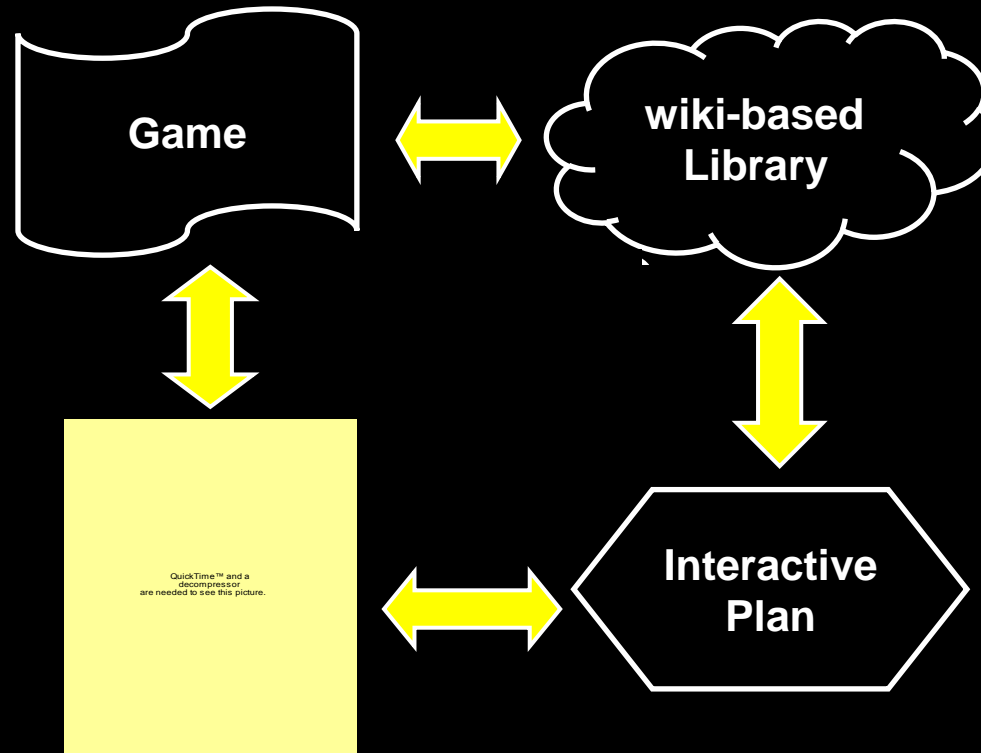
- Web-based games have been available for years that enable players to model city building and transportation planning.
- When will similar applications (i.e. more complex and realistic) be developed and used in real world planning projects?



### 3. Recommendations for Web 2.0 Applications

1. Embrace Web 2.0
2. Design counts
3. Don't reinvent the wheel
4. Use an integrated approach
5. Maintenance matters
6. Maximize free access to your data
7. Organize websites carefully
8. Obtain sufficient funding
9. Create incentives for participation

## 4. Example Application Concepts



Approach: Combine Web 2.0 applications into a coherent system for encouraging and facilitating effective collaboration in transport planning.

# Bus Meister

- Bus Meister helps citizens identify and implement ideas for improving public transport operations:
  - Game - enables users to test and understand how operating changes can improve service on their public transport routes.
  - Crowd sourced research wiki - documents best practices in public transport operations.
  - Social networking - tools to help users generate political support for implementing improvements.
- Bus Meister could be extended to additional modes and/or full street design.
- Implementation: research project?

# Bus Meister Game

- Players enter information (e.g. travel time, location of bus lanes, etc.) about their public transport route into the game using interfaces developed with Web 2.0 applications (e.g. Google Maps) and applications for smart devices (e.g. smart phones).
- Data could also be provided by public transport agencies;
- Players drag improvement “widgets” onto game PT line maps to evaluate impacts;
- Game aspect leads to competition and increases interest;
- Improvement widgets would be developed based on information from research wiki.

# Peer-to-Plan

- Peer-to-Plan helps citizens collaborate effectively in the planning process:
  - Peer-to-Plan application tools website - set of applications used in the Peer-to-Plan process.
  - Research library - wiki-based information regarding environmental impact analysis, design ideas, etc.
  - Social networking - tools to help users form groups and work together effectively.
- Can be adapted to many different planning processes.
- Implementation: research project?

# Peer-to-Plan: Process

1	Agency states intent to prepare plan on internet-based clearing house website.
2	Individuals interested in collaborating on project register with Peer-to-Plan; website provides social networking tools facilitating formation of ad-hoc project community(s).
3	Agency prepares studies using relevant guidelines; all studies and reports are made available on the Peer-to-plan as they are released for public comment.
4	Peer-to-plan provides tools for community members to comment, add information to the record, and make recommendations. See next slide.
5	Public comment period ends, agency completes document by preparing responses to comments and incorporating them into a 'final' document for decision-making body.
6	The 'final' document is posted and the public (including experts) add information to the website (e.g. vote on the quality of responses, indicate importance of issues etc).
7	Decision-making body considers document (including comments, ratings and indications of importance from the website) and makes decision.

# Peer-to-Plan: Some Key Points

- Peer-to-Plan is modeled after Peer-to-Patent approach described in Beth Simone Nowak's book *Wiki Government* (2009).
- The Peer-to-Plan website would include features allowing users to rate comments and recognize users with highly rated comments.
- The community would have the ability to block abusive users and control the information developed in their 'report'.
- Peer-to-plan does not replace the public involvement process, it simply facilitates organizing a community of people who agree to collaborate in preparing a group response; multiple groups could also be created, each collaborating in development of its own report.

## 5. Questions and Comments

- What do you think of the concept applications?
- What improvements would you suggest?
- How can Web 2.0 be applied in your work and organization?
- For more information:

<http://www.andynash.com/projects/web2transport.html>