Zipano TECHNOLOGIES
YOUR PRIVACY IN YOUR HANDS

More Control → More Sharing

Ziv Baum, CEO
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800M

Install base of GPS-enabled mobile devices, 2009

Data From: ABI research

$14B

Location Based Services (LBS) market size by 2014

Data From: ABI research

7200

Location based apps on different app stores
(February'10)

Data From: Skyhook Wireless

**LBS market is exploding. But where are the users?
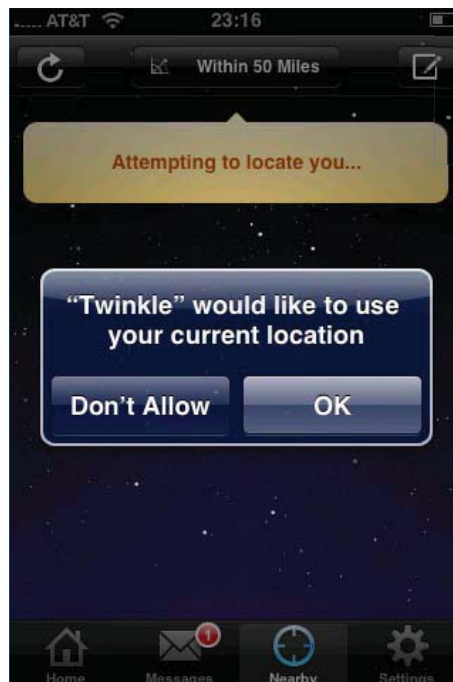Worried about P2P and "big brother" privacy issues**

Location adds a new level of complexity

Privacy is really at the core of the value proposition

"The debate about privacy is really a debate about control…By giving people that control, we enable them to share more stuff."
(Mark Zuckerberg, founder of Facebook)

Apple expects you….

…to answer the same question 1000 times…

…with multi-tasking in OS4, they'll show you which app accessed your location in the past 24 hours…
…even if it's too late…

Android expects you…

to agree upfront and never change your mind

Google Warns Latitude Users That They Might Be Sharing Their Location

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- **Spin-off from Carnegie Mellon's Mobile-Commerce Lab**
- **We offer mobile apps platforms and apps developers a way to give LBS users more control**
- **Users who have the ability to express their privacy preferences and to monitor who has asked for their location are more comfortable with sharing**
- **Locaccino, a Facebook-based location sharing app built on top of Zipano's privacy layer, demonstrates how our platform works**

The Value of Richer Settings
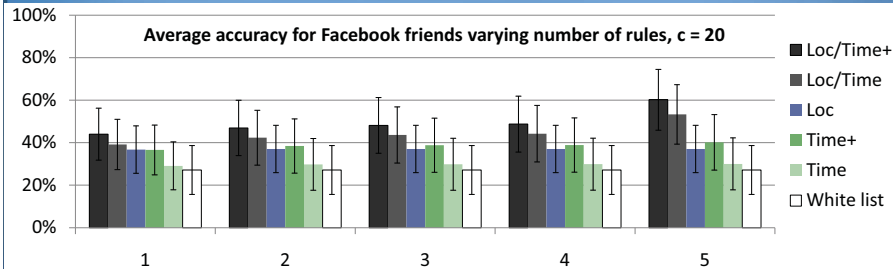
Average accuracy

Legend: Loc/Time+, Loc/Time, Loc, Time+, Time, White list

Categories: Friends & family, Facebook friends, University community, Advertisers
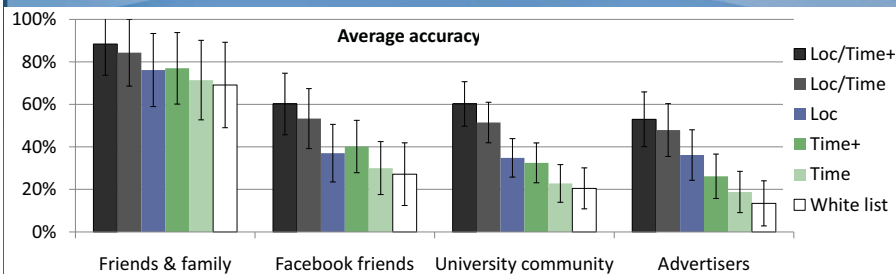
White Lists Simply Don't Cut It!
…This is why Loopt, Latitude & Co. Are Failing

…But Are Users Ready For This?

Are users willing to define enough rules?

Average accuracy for Facebook friends varying number of rules, c = 20

- •The benefits are visible even with just 1 or 2 rules!
- •Similar results for advertisers
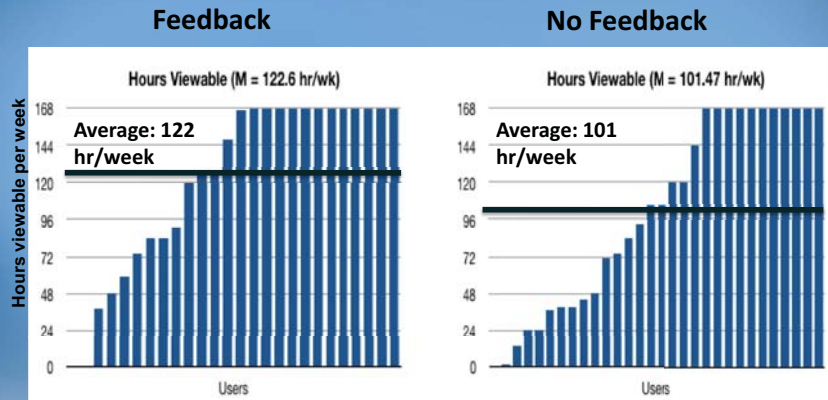

Here's the Real Kicker!

Average time shared
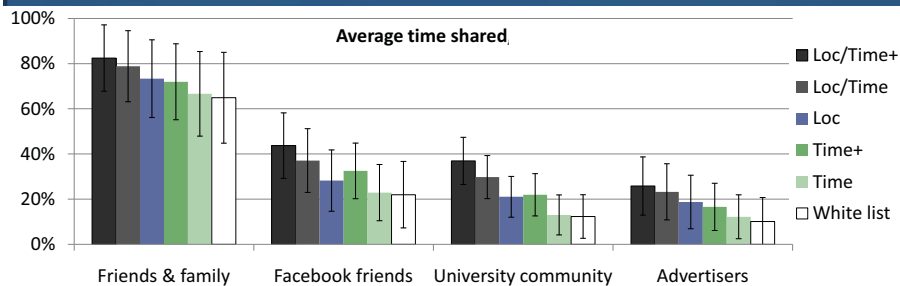
Users just err on the safe side in setting up their preferences

➢More than 2x the sharing with Facebook Friends!
➢2.5 x times the sharing with advertisers!!

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Some Other Considerations
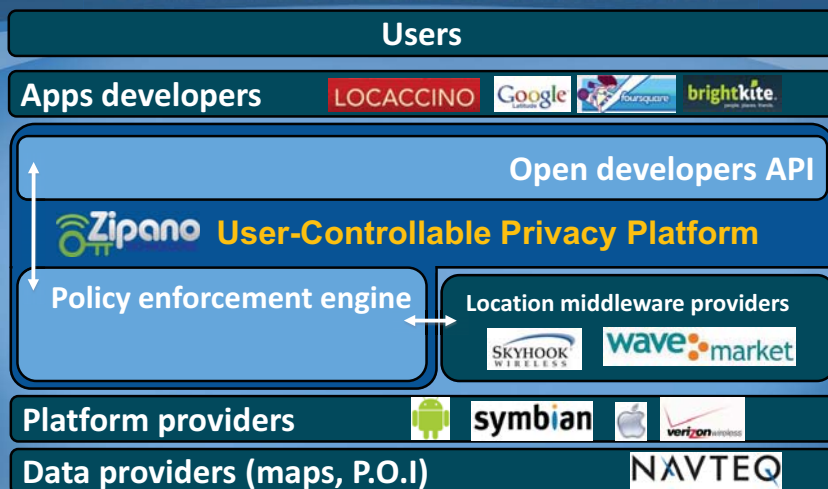
❑ Good **Default Settings** or **Personas** also help
❑ ...As does the ability to **review who's requested your information**

Feedback **No Feedback**

Introducing the Privacy Layer

Users

Apps developers

Open developers API

Zipano User-Controllable Privacy Platform

Policy enforcement engine   Location middleware providers

Platform providers

Data providers (maps, P.O.I)

Zipano's UCPP in a Nutshell
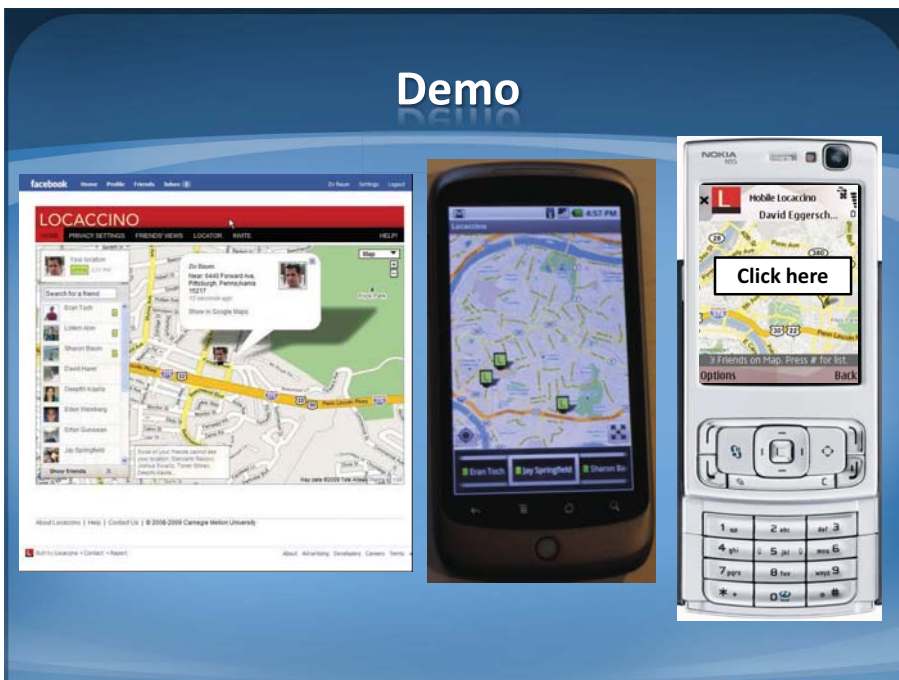
❑ **Highly scalable**

   ❑ Facebook scale

❑ Extremely **low latency**

   ❑ Cell phone operator latency

❑ Capable of capturing & enforcing **rich and extensible set of privacy attributes**

❑ APIs for **privacy preference editing, location request processing, user request auditing, etc.**

❑ **Secure**

   ❑ **flexible authentication plugins** for services like OpenID

Demo

Bottom Line

- **Richer privacy settings** will be key to **unlocking the full potential of location** sharing and location-based advertising

- **Zipano's** UCPP offers **application developers, operators and other aggregators** a new layer of interoperability that will be critical to growing their ecosystem

More Control ⟶ More Sharing

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Relevant Websites

- www.zipano.com
- www.locaccino.com
- http://mcom.cs.cmu.edu/user-controllable-security-and-privacy/

Some Recent Press Coverage

- Startup Zipano sells privacy software to control who can find you, Pittsburgh Post Gazette
- "As Location-Sharing Services Grow, Privacy Concerns Do Too", Wall Street Journal
- "The Mobile Net: Why to Worry about Privacy Regs", **Business Week**
- "Now You Can Track Colleages and Students on Your Laptop", **Chronicle of Higher Education**

Relevant Publications

❑ Norman Sadeh, Jason Hong, Lorrie Cranor, Ian Fette, Patrick Kelley, Madhu Prabaker, and Jinghai Rao. Understanding and Capturing People's Privacy Policies in a Mobile Social Networking Application *Journal of Personal and Ubiquitous Computing 2009.*

❑ J. Tsai, P.G.Kelley, L.F.Cranor and N.M. Sadeh, "Location Sharing Technologies: Privacy Risks and Controls", to appear in "I/S: A Journal of Law and Policy for the Information Society", 2010.

❑ Ramprasad Ravichandran, Michael Benisch, Patrick Gage Kelley, and Norman M. Sadeh. Capturing Social Networking Privacy Preferences: Can Default Policies Help Alleviate Tradeo ffs between Expressiveness and User Burden? *PETS '09.*

❑ Janice Tsai, Patrick Kelley, Paul Hankes Drielsma, Lorrie Cranor, Jason Hong, and Norman Sadeh. Who's Viewed You? The Impact of Feedback in a Mobile-location System. *CHI '09.*

❑ Patrick Kelley, Paul Hankes Drielsma, Norman Sadeh, Lorrie Cranor. User Controllable Learning of Security and Privacy Policies. *AISec 2008.*

❑ Michael Benisch, Patrick Gage Kelley, Norman Sadeh, Lorrie Faith Cranor, Capturing Location-Privacy Preferences: Quantifying Accuracy and User-Burden Tradeoffs. CMU-ISR Tech Report 10-105, March 2010

❑ Jason Cornwell, Ian Fette, Gary Hsieh, Madhu Prabaker, Jinghai Rao, Karen Tang, Kami Vaniea, Lujo Bauer, Lorrie Cranor, Jason Hong, Bruce McLaren, Mike Reiter, and Norman Sadeh. User-Controllable Security and Privacy for Pervasive Computing. *The 8th IEEE Workshop on Mobile Computing Systems and Applications (HotMobile 2007).* 2007.

❑ Norman Sadeh, Fabien Gandon and Oh Buyng Kwon. Ambient Intelligence: The MyCampus Experience School of Computer Science, Carnegie Mellon University, Technical Report CMU-ISRI-05-123, July 2005.