

Polaris, A Distributed Online Social Network

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Today's Online Social Networks (OSNs)



Walled Garden Architect

- + OSNs control large amounts of users' private data
- + Serve contextual targeting online ads

Monopoly

- + Account required to view friend's content
- + OSNs own all user information, including personal information, social data, and friends list

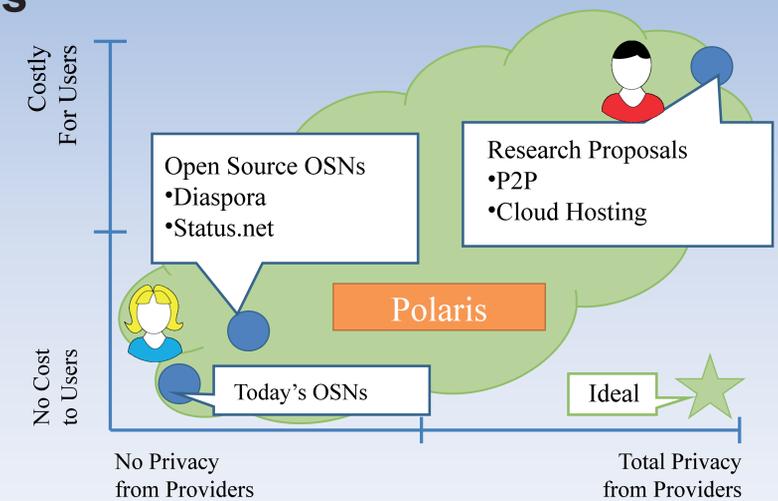
Design Space: Privacy Versus Cost

Alternatives To Current OSNs

- + Academic proposals offer high levels of privacy but offload cost to users
- + Open source proposals gain minor increases in privacy, but not enough

Design Choice

- + Ability for users to choose their own privacy versus cost tradeoff
- + Ability for users at different points in the privacy versus cost design space to still interact



Polaris Architecture

Polaris Basics

- + Allows users to make their own trade-off between cost and privacy
- + Common APIs enable communication between clients and providers

Clients

- + Smartphones act as Access Control Managers (ACMs) and OSN client
- + Clients distribute access tokens pairwise between each friend and each service signed up for

Providers

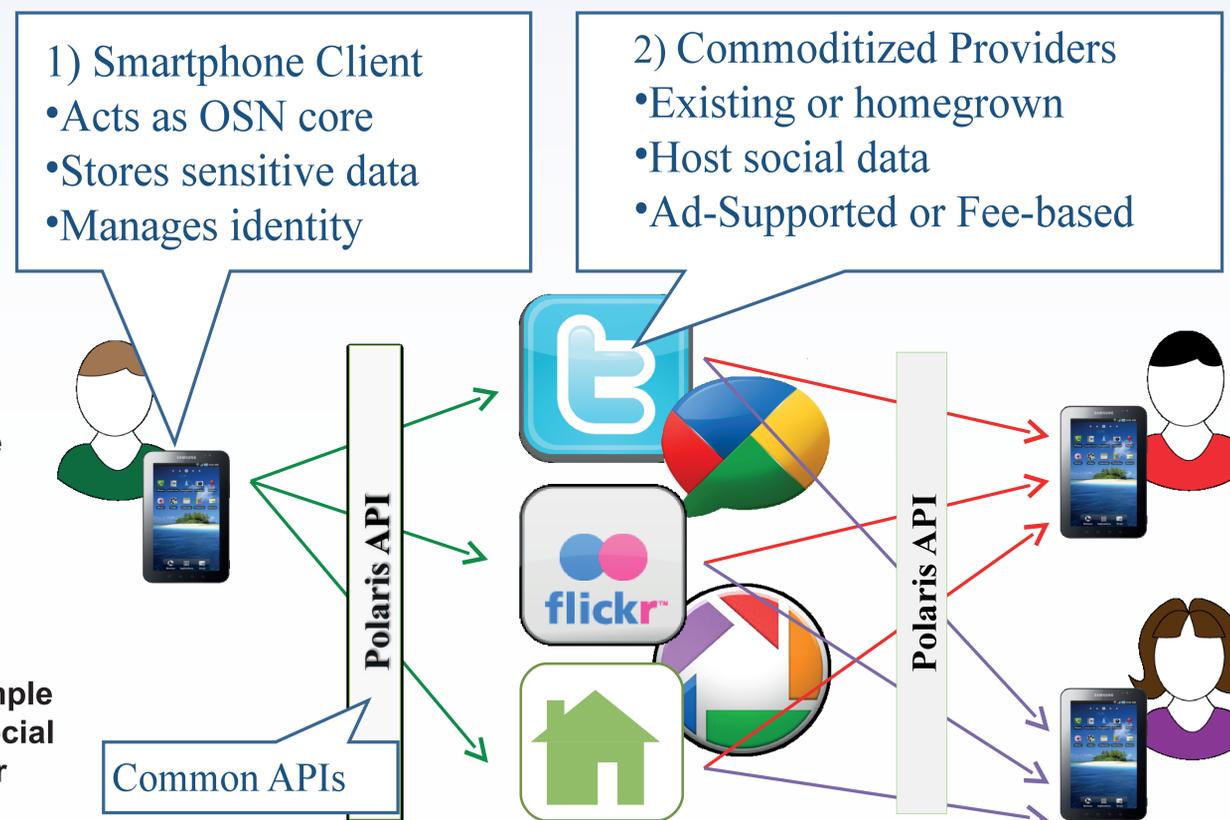
- + Implement a single social functionality, status updates or photo posting for example
- + No account required to view a friend's social data on provider you don't use, thus your privacy is not affected by friend's choice

1) Smartphone Client

- Acts as OSN core
- Stores sensitive data
- Manages identity

2) Commoditized Providers

- Existing or homegrown
- Host social data
- Ad-Supported or Fee-based



Client Implementation

- + Android Application
- + Cloud to Device Messaging (C2DM) platform for real-time push notifications
- + Bump API for friending securely and instantly



Provider Implementation

- + Ruby on Rails
- + Services include status, geolocation, and photo

