

Events, Picos, and Microservices

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Internet of Things

The Internet of Things will lead
to a computing experience
that is immersive & pervasive.



Ambient Computing



**STREET
CLOSED**

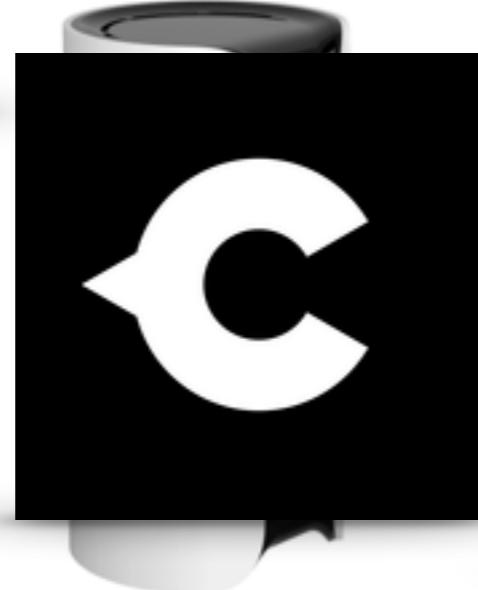
**DO NOT
ENTER**

DETOUR



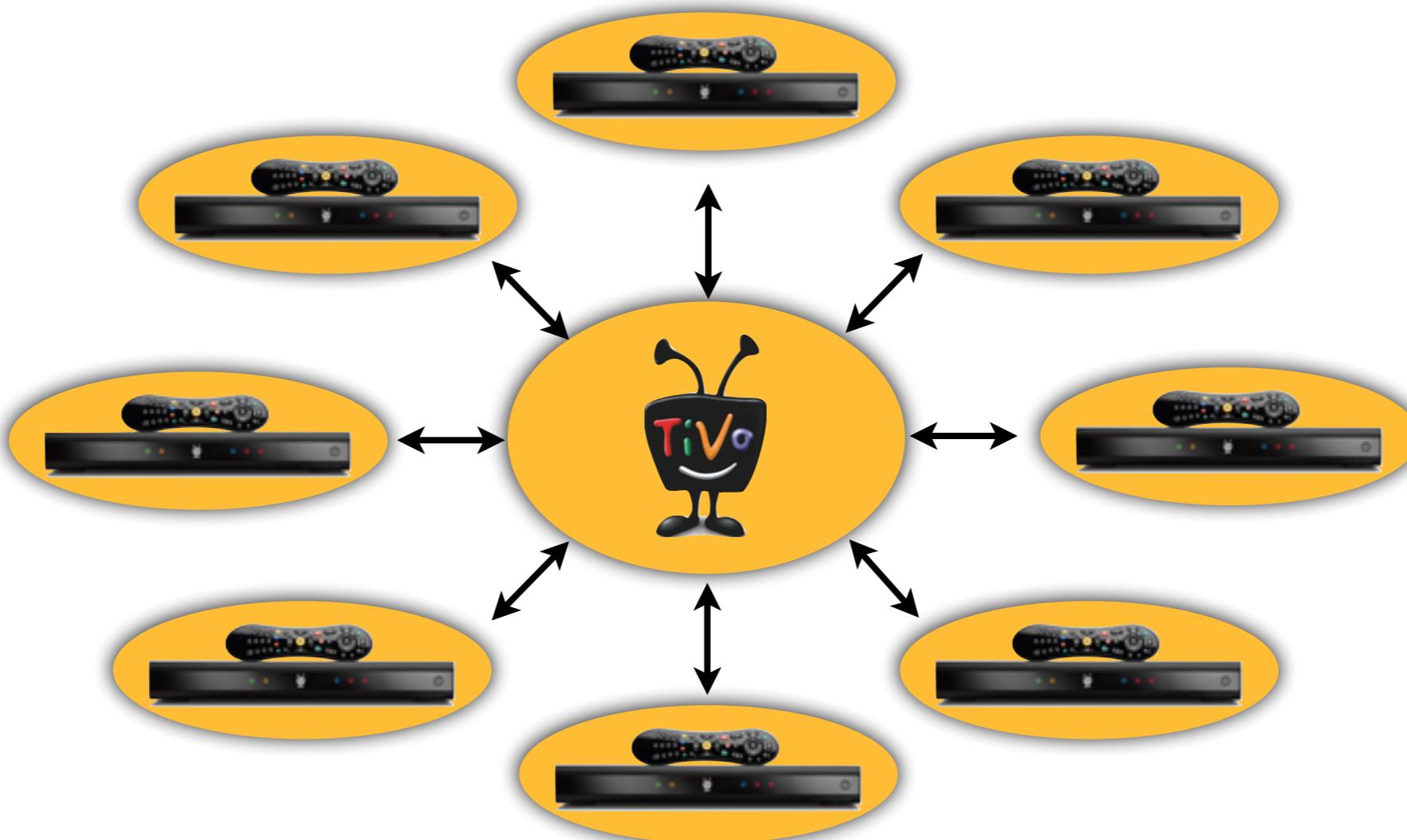
The Current IoT Model Won't Scale

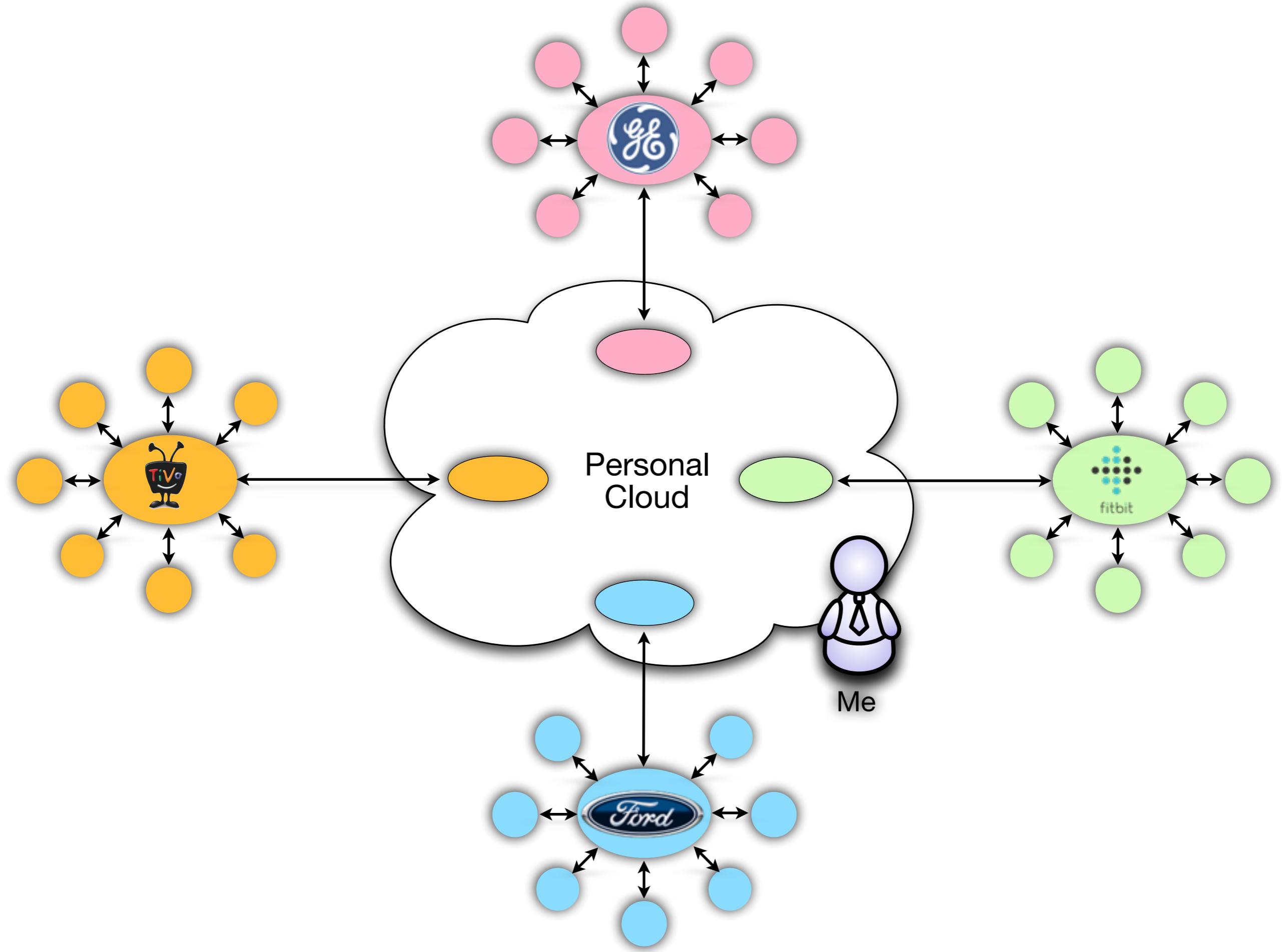




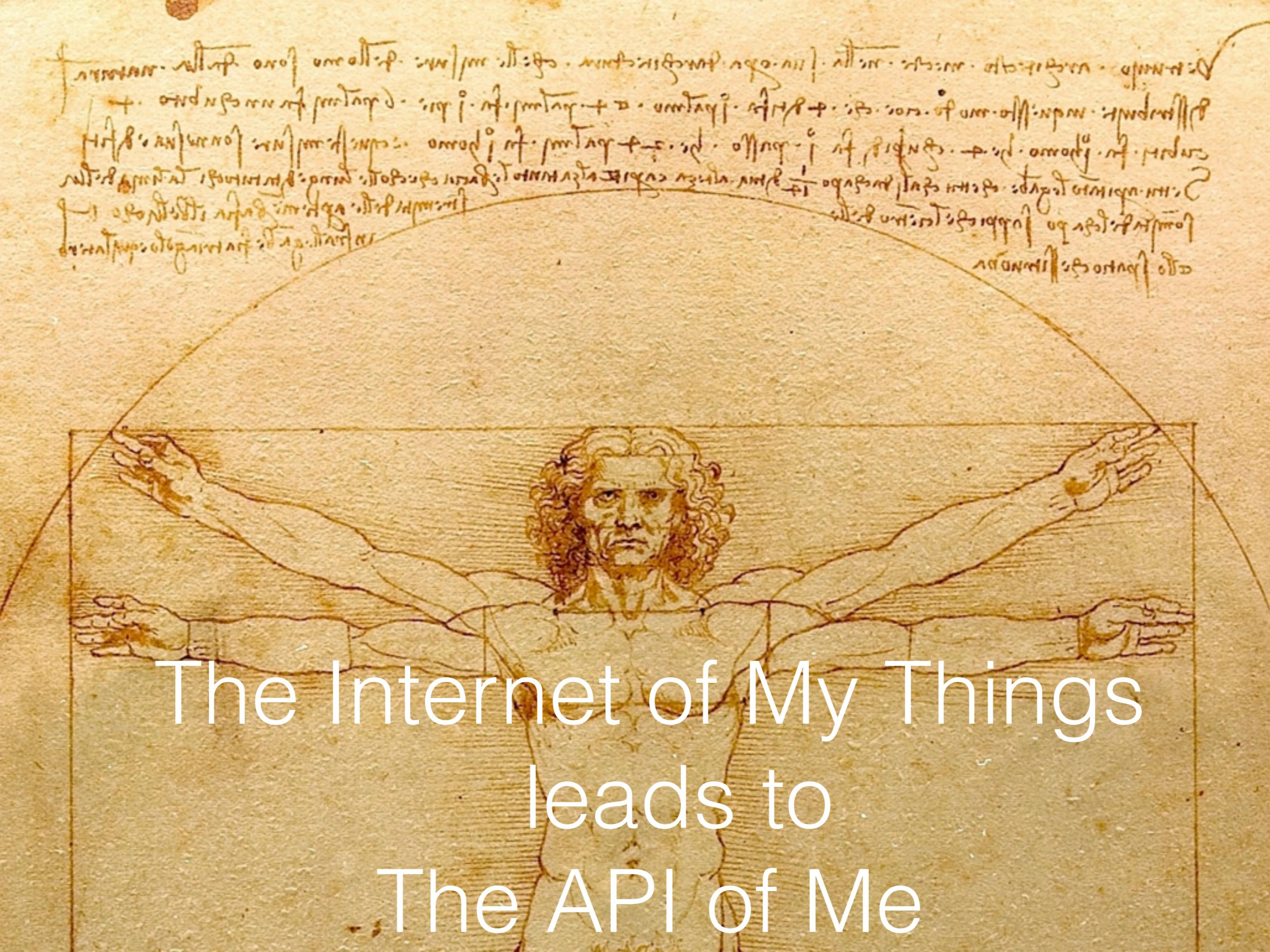
Me







The Internet of *My*
Things



The Internet of My Things leads to The API of Me



<http://joinfuse.com>

 Fleet 

 Bradford's ... 
Chevrolet Cavalier

 Parked at 151 South 1150 East Street,

 Ford F-150 

 95% fuel remaining

 Parked at 151 South 1150 East Street,

 Lynne's Burb 
Chevrolet Suburban

 8% fuel remaining

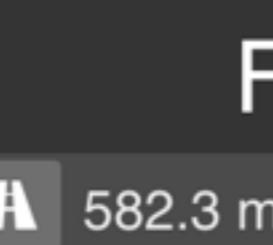
 Parked at North 400 West, Orem, UT 8

 Trips 

 September
Fleet Totals

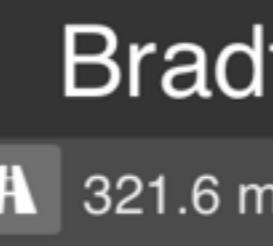
1,097	220	\$218
Miles	Trips	Fuel Cost

 Ford F-150 

 582.3 miles traveled

 93 trips taken

 \$137.96 total trip cost

 Bradford's Cavalier 

 321.6 miles traveled

 70 trips taken

 \$43.69 total trip cost

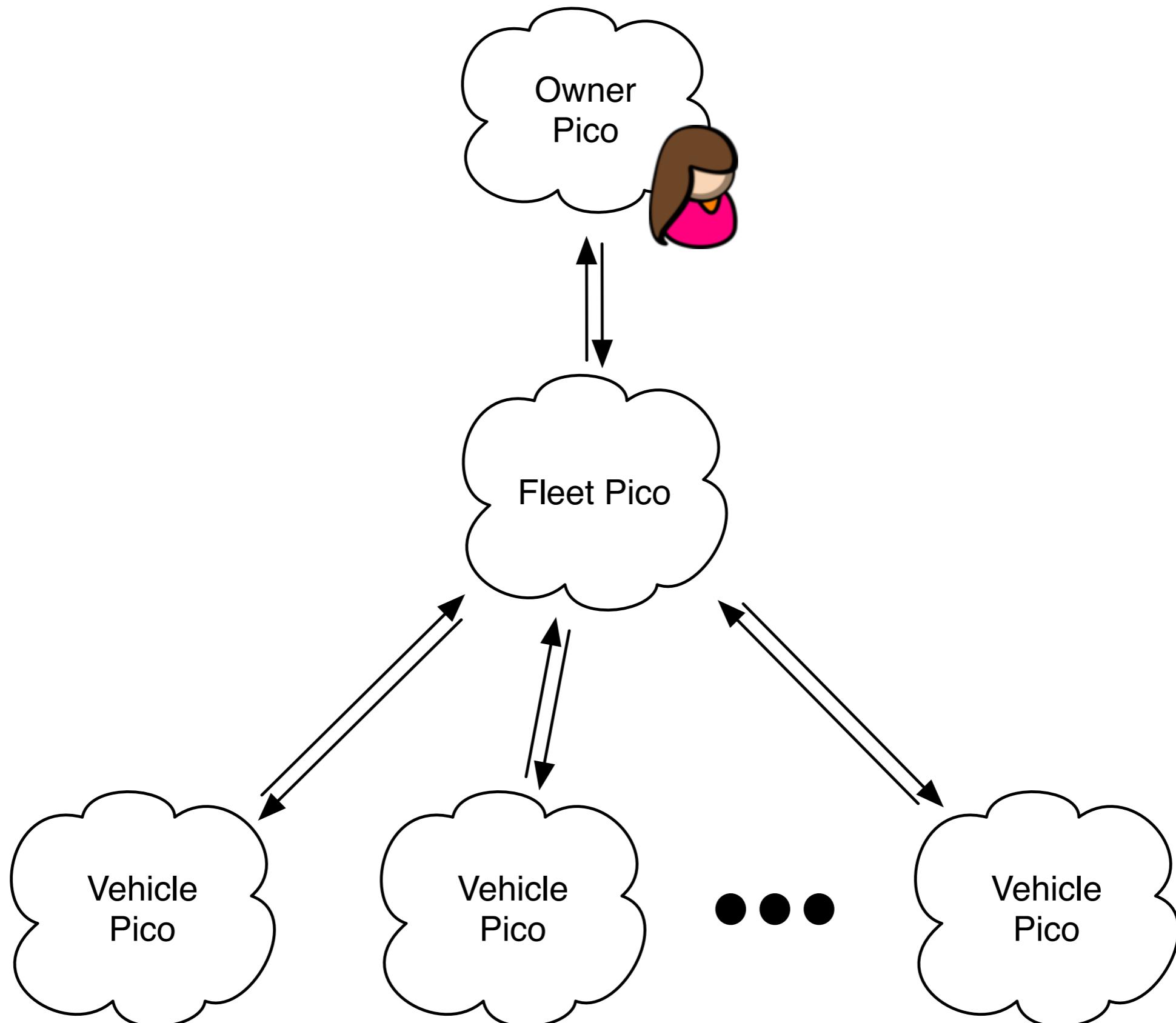
1. Distributed transaction processing and applications
2. Peer-to-peer messaging and sharing
3. Autonomous coordination and contracts between peers

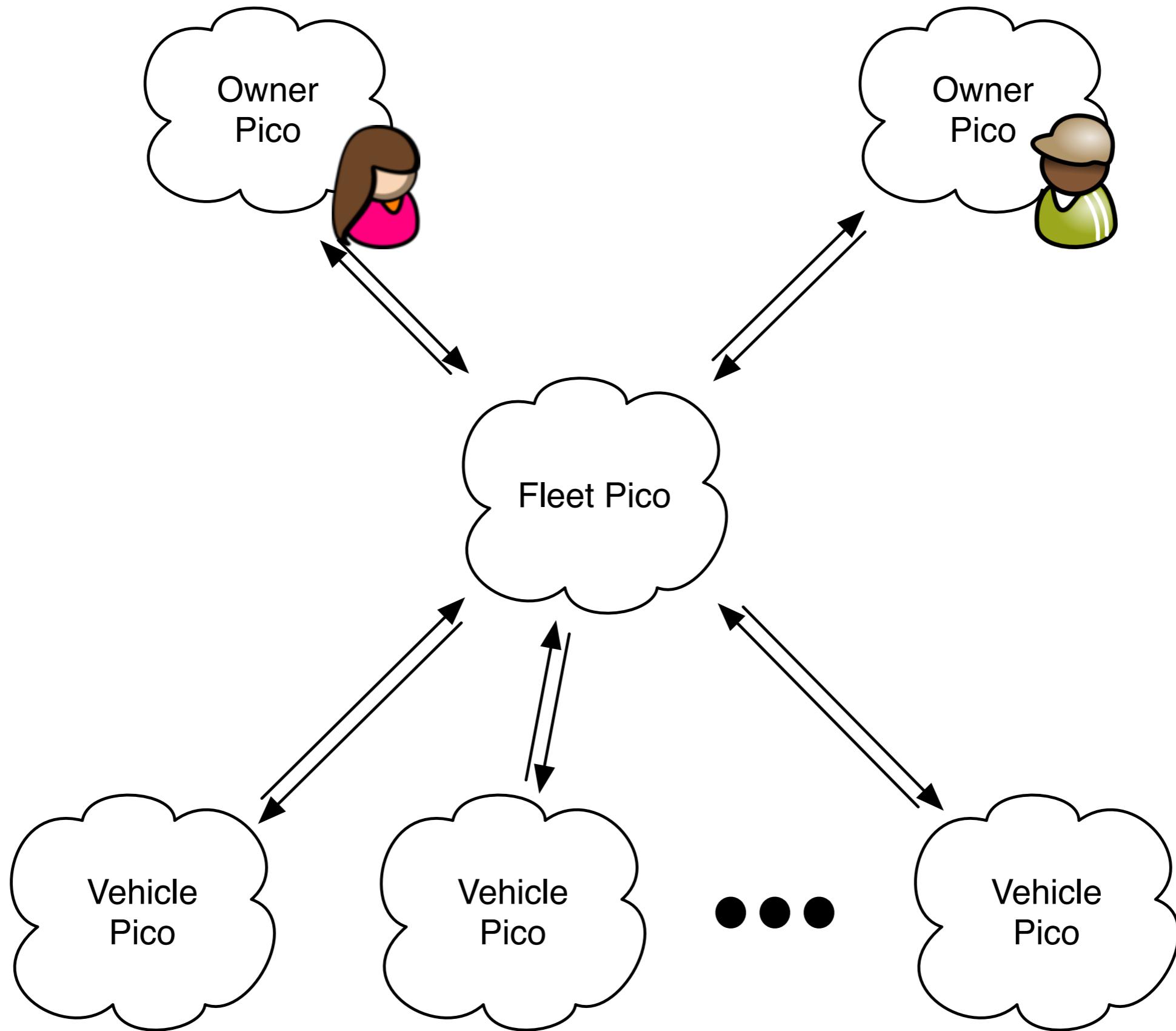


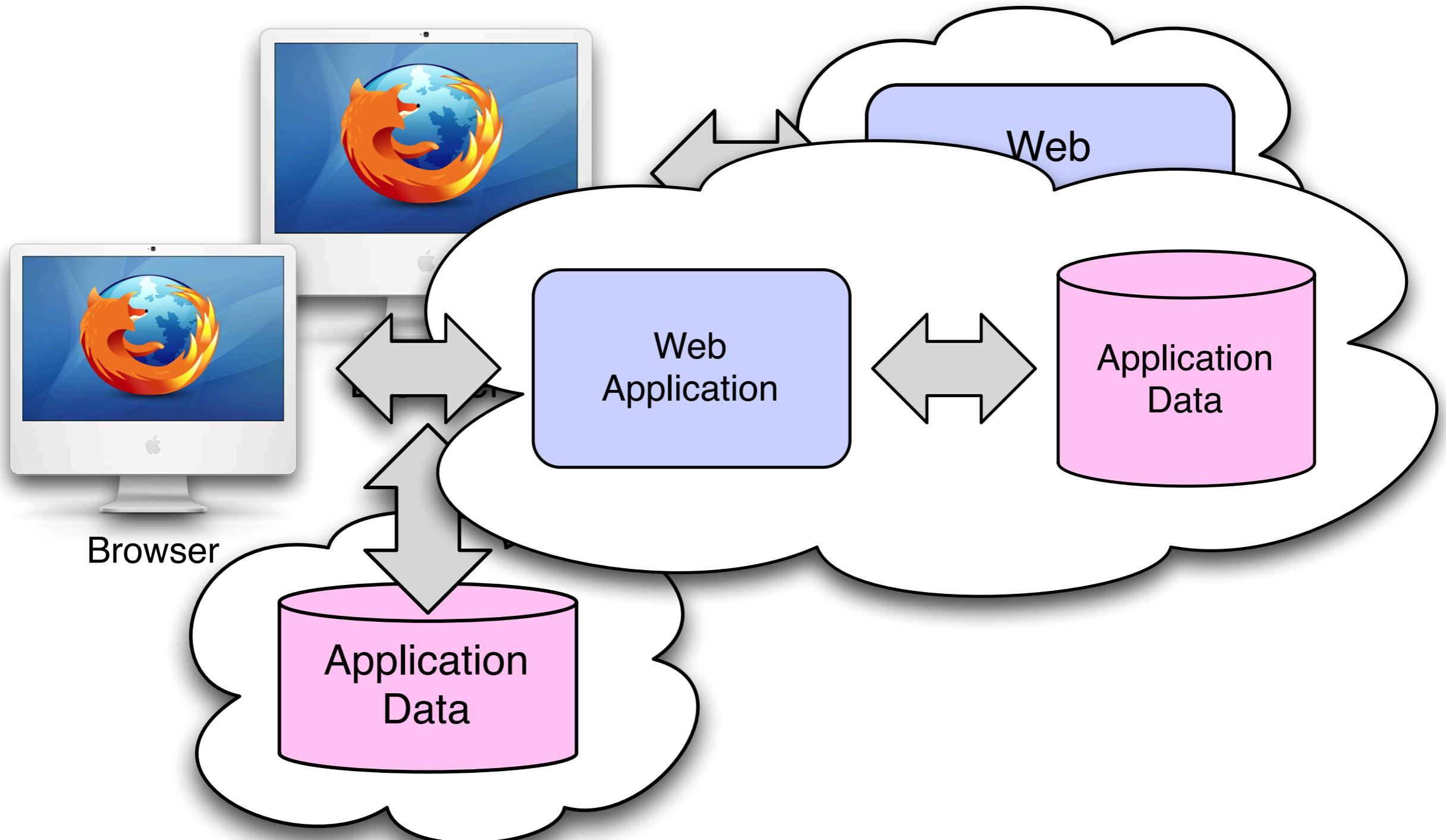
picos

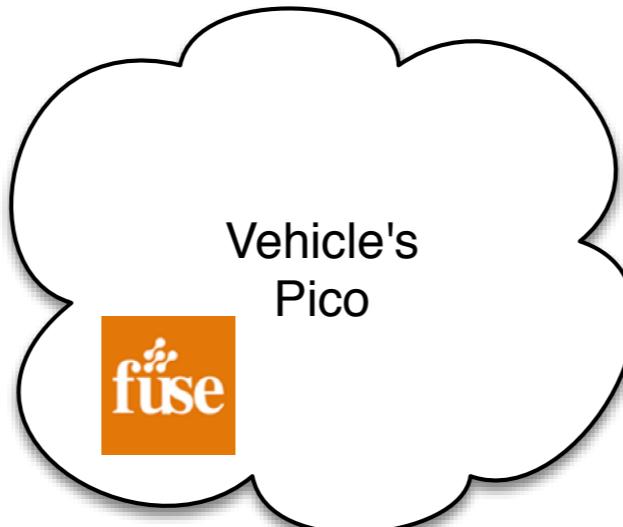
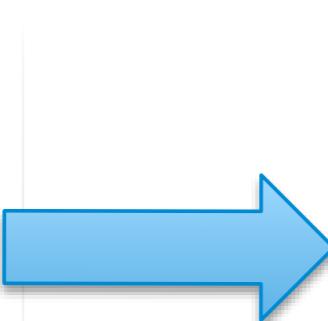
Picos are online computers

- **Identity**—they represent a specific entity
- **Open event network**—they respond to events
- **Processing**—they run applications autonomously
- **Event Channels**—they have connections to other picos
- **Storage**—they persistently encapsulate both structured and unstructured data
- **Services**—The provide a consistent set of services
- **APIs**—they provide access to and access other online services



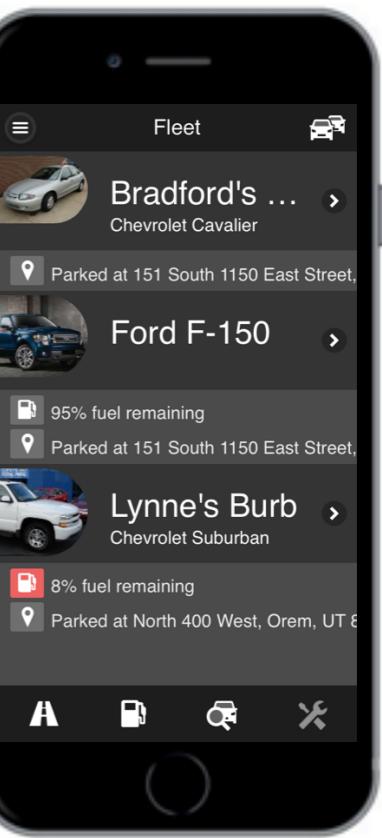
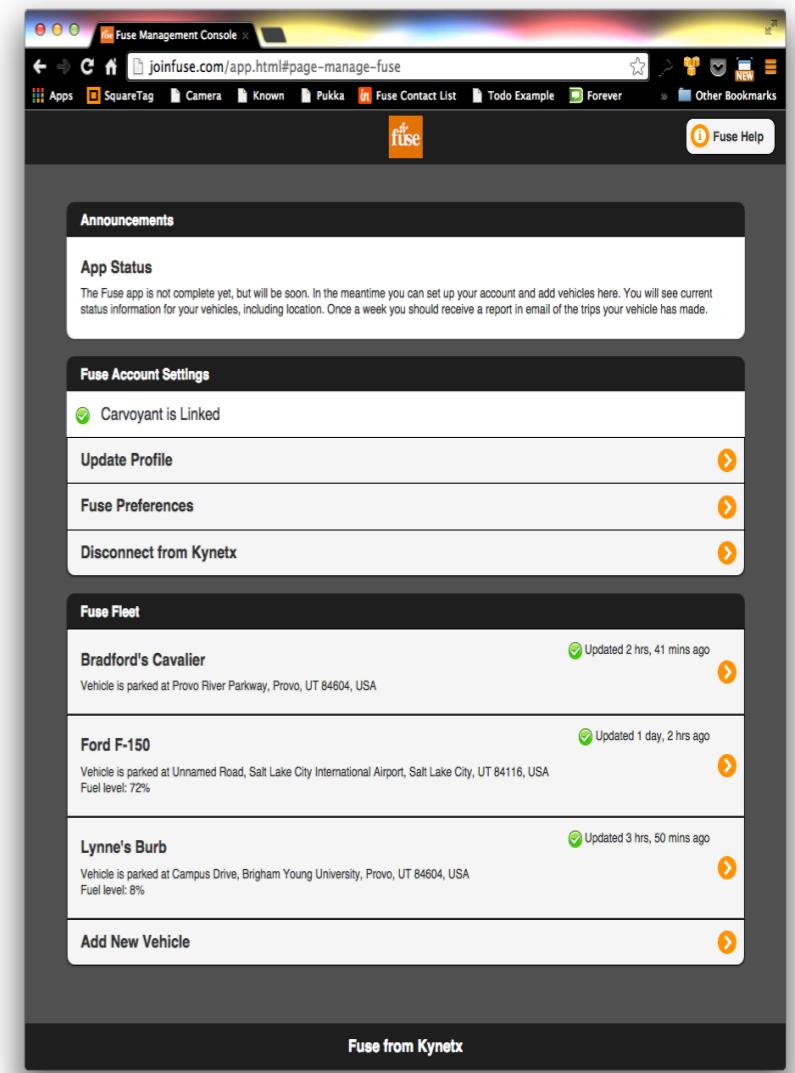




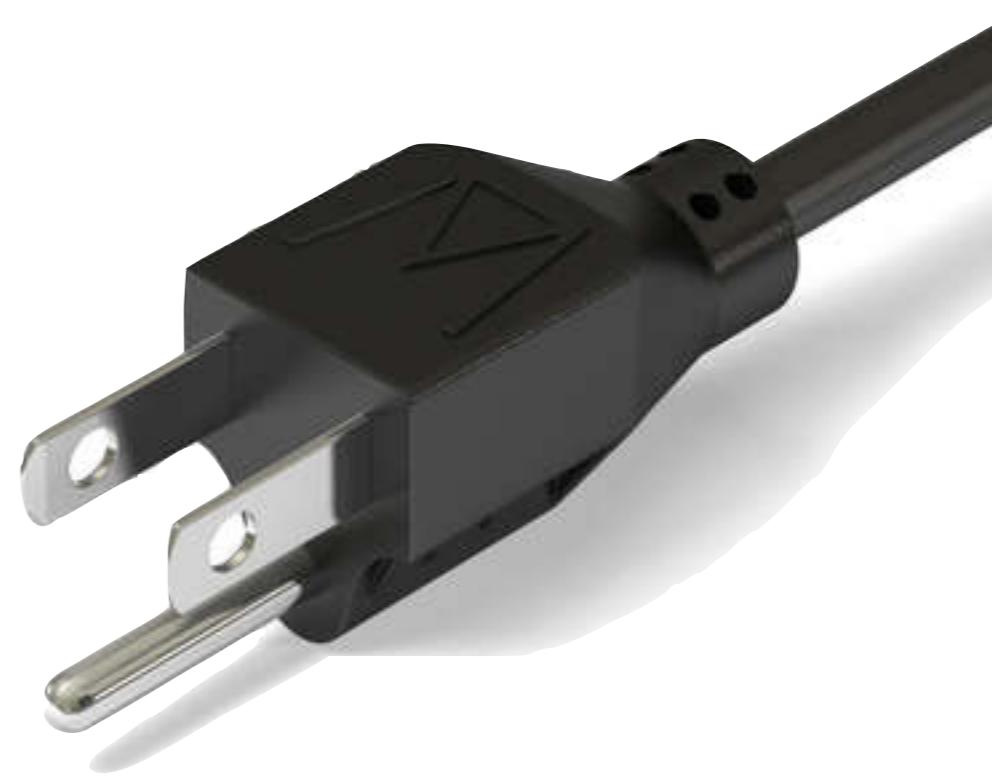


Mobile

iCalendar

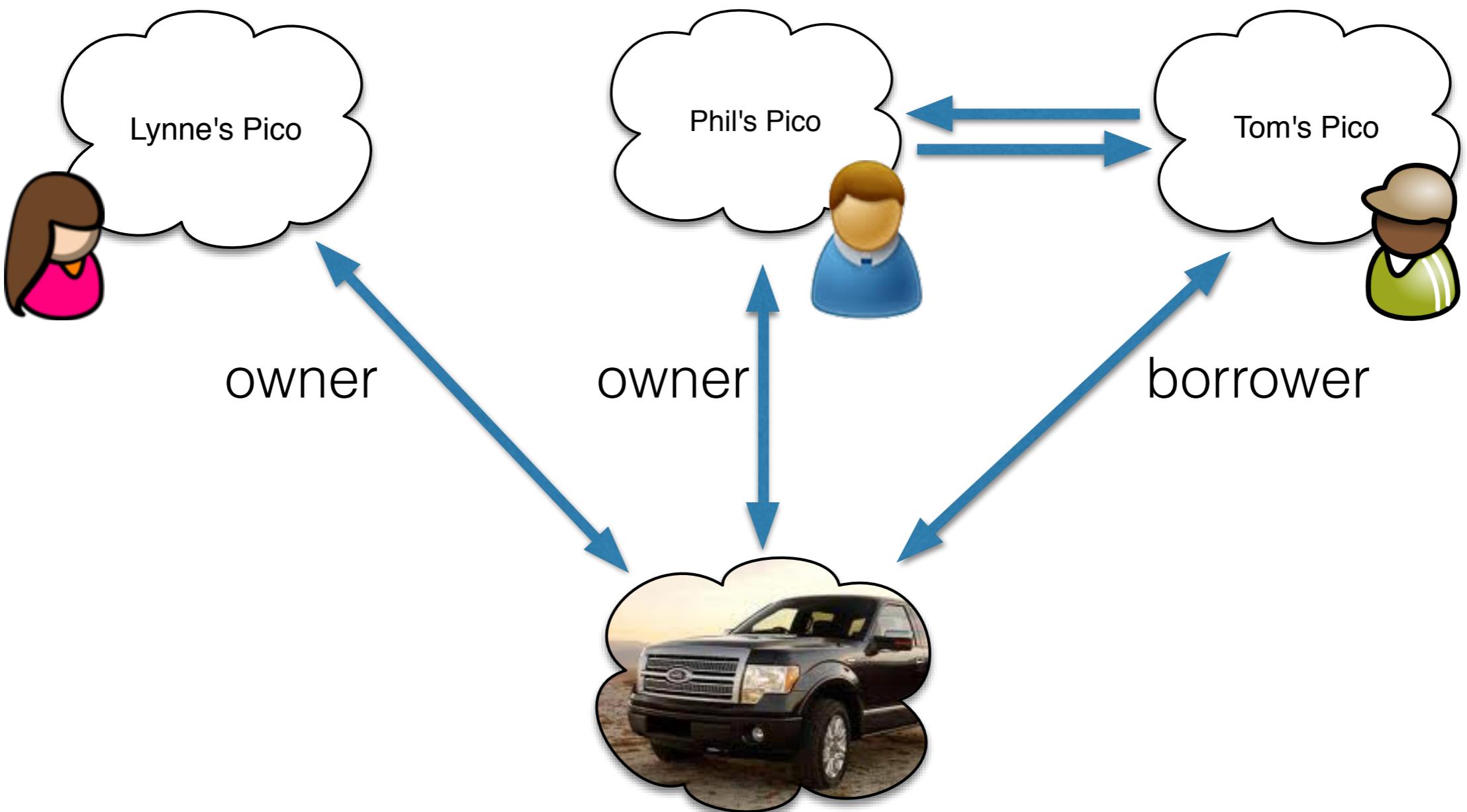


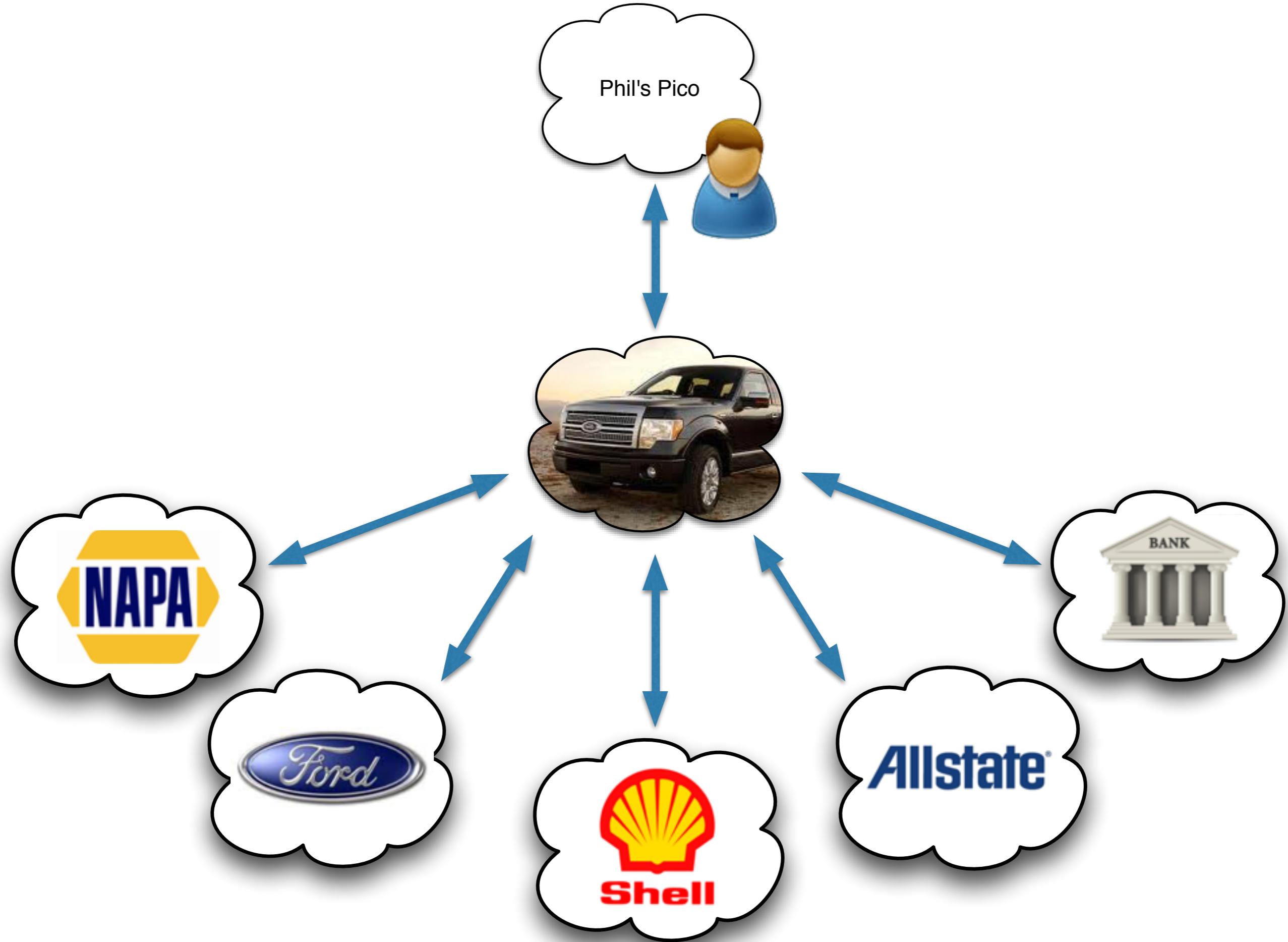
Rather than a model
where a system
presents an API for
a collection of
resources....



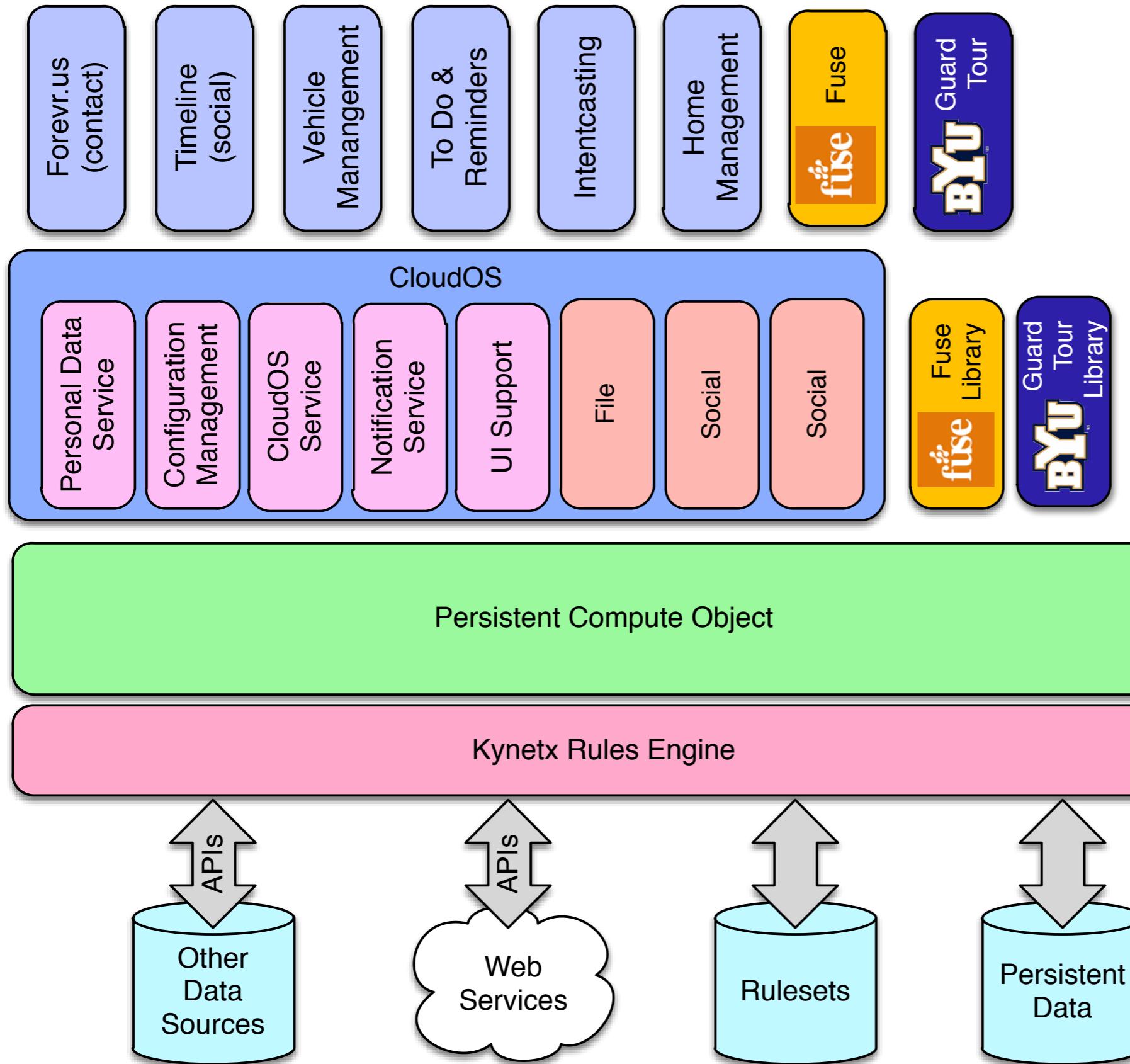
Picos present a
model wherein each
pico presents it's
own, customizable
API







Picos Support A Familiar Model



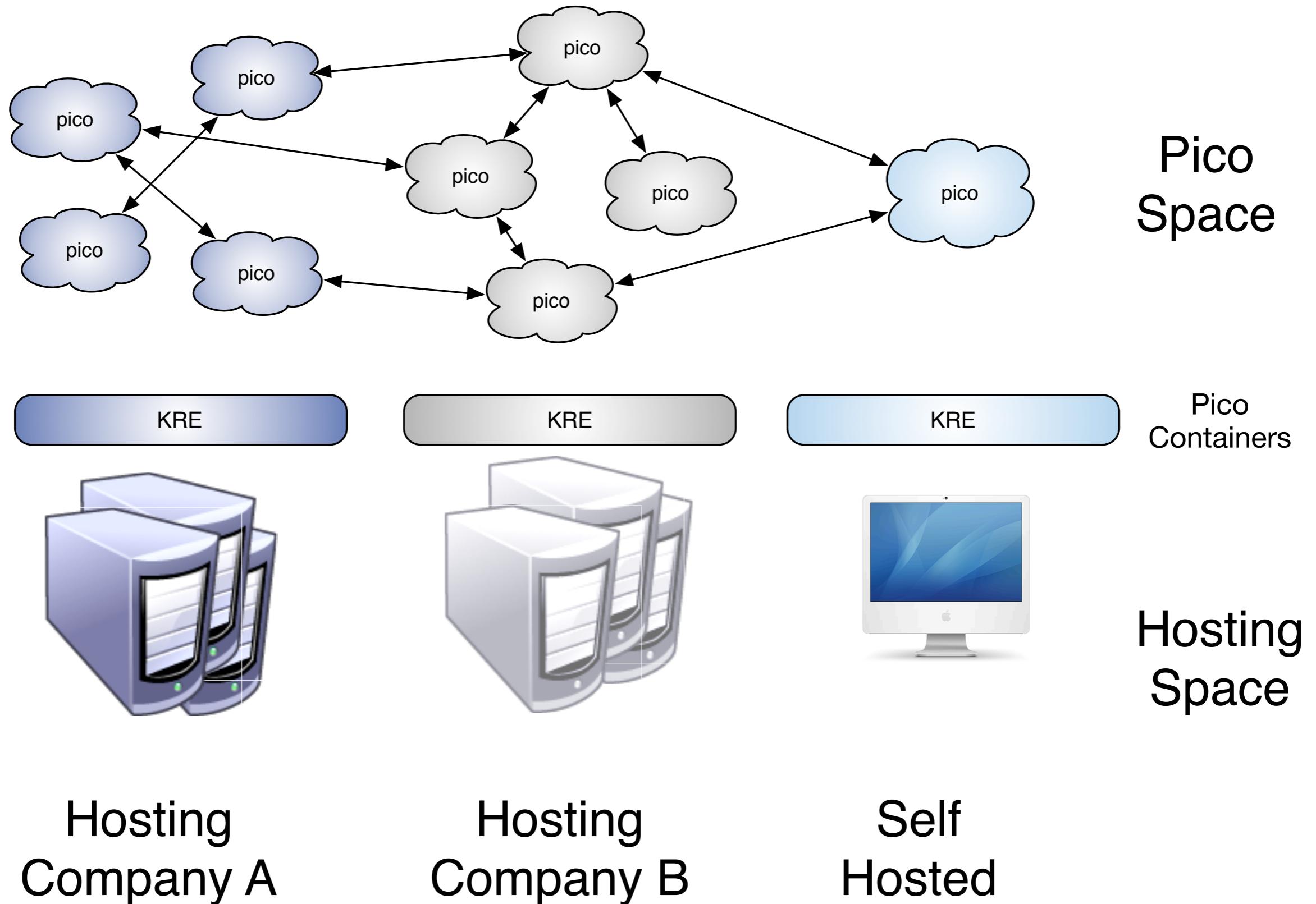
applications

libraries

objects

container

Picos Are Decentralized & Networked



Built on open standards
Built on open source

<http://github.com/kre>

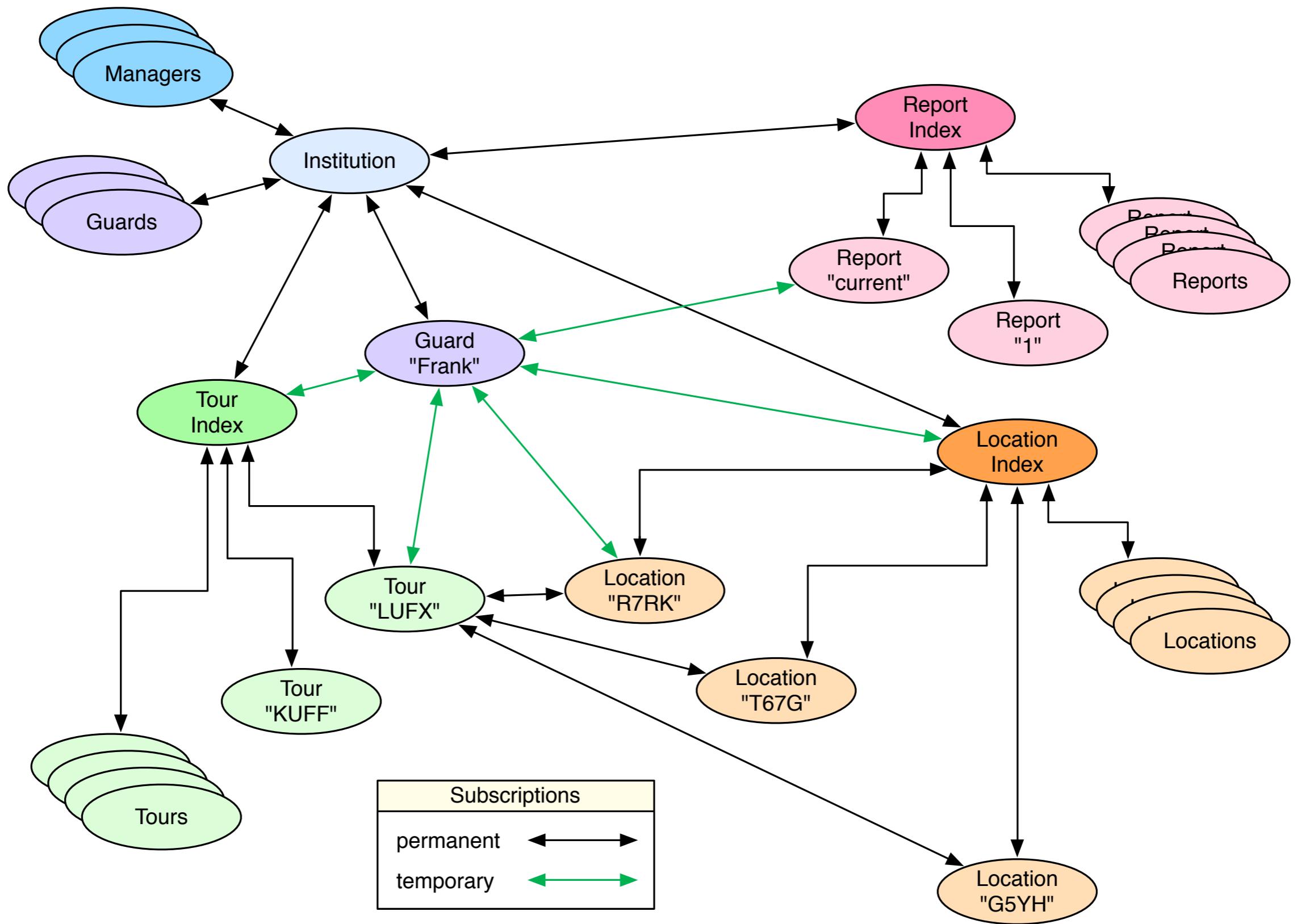


open source

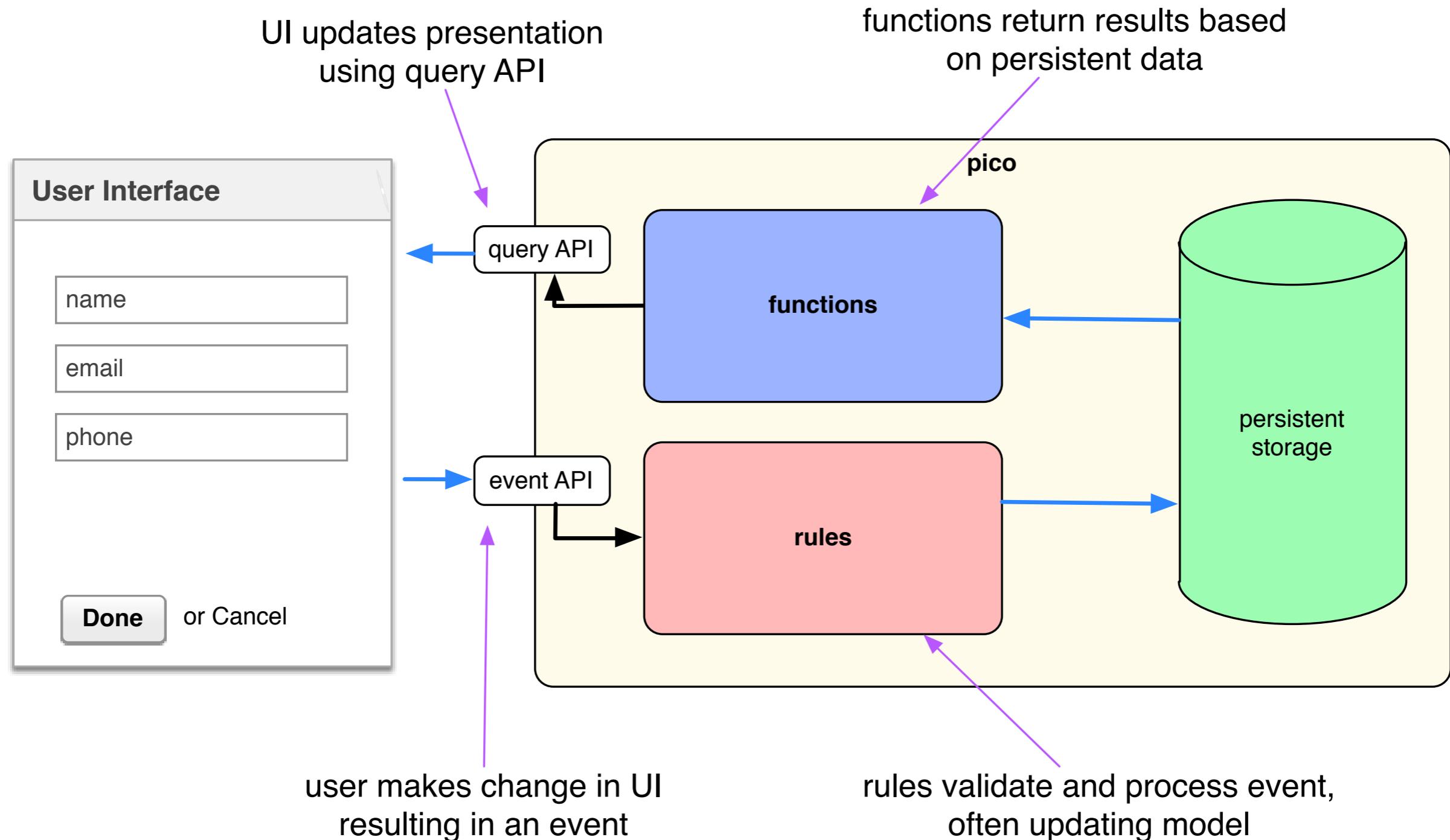
But it's not just about manufactured things...



This can get complex...

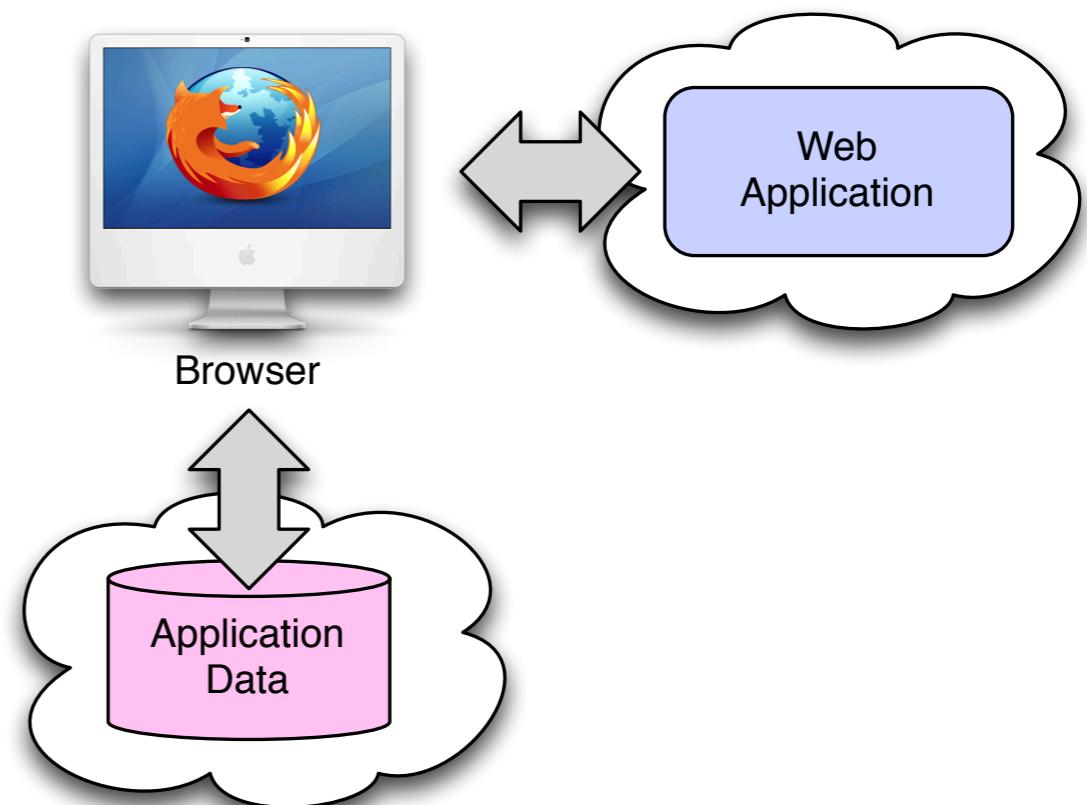


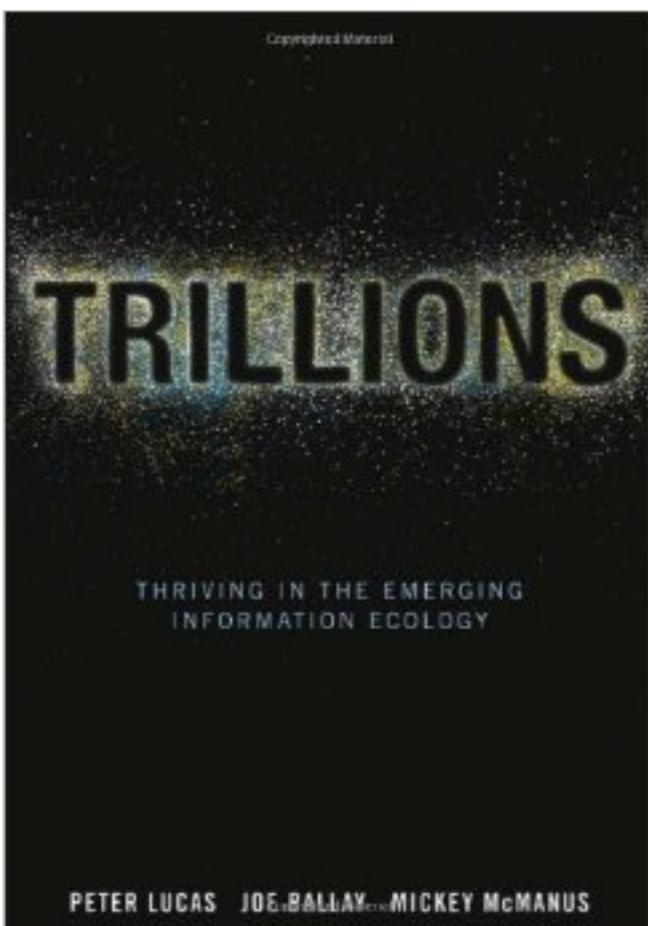
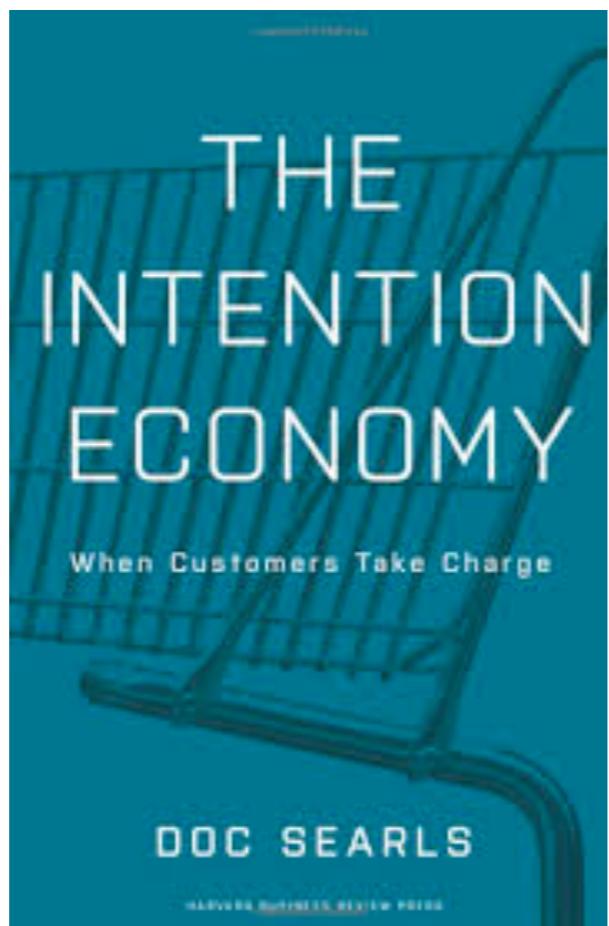
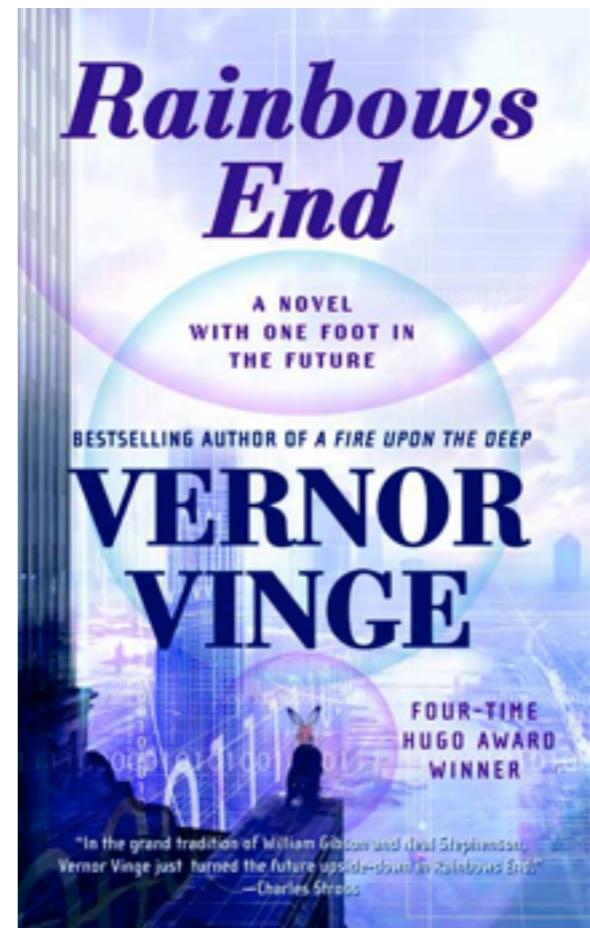
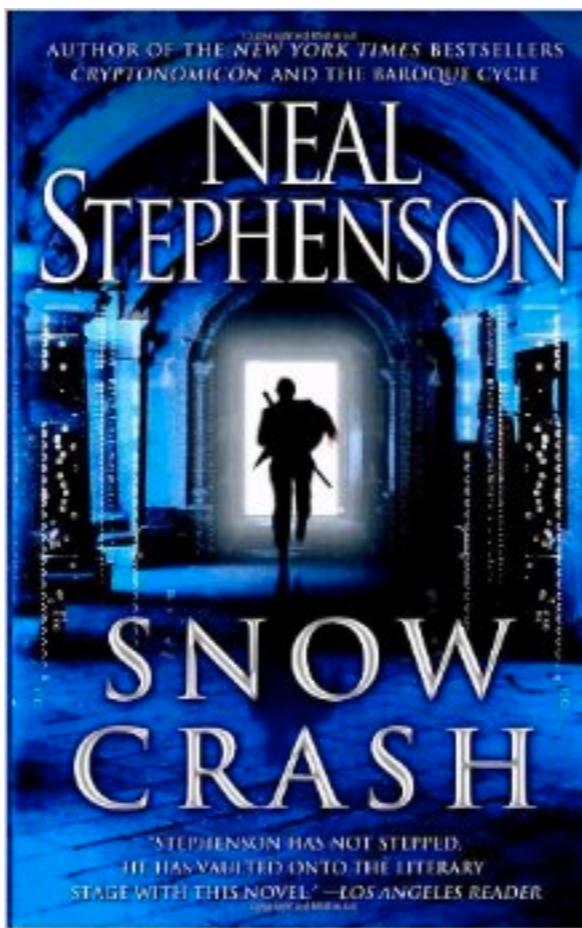
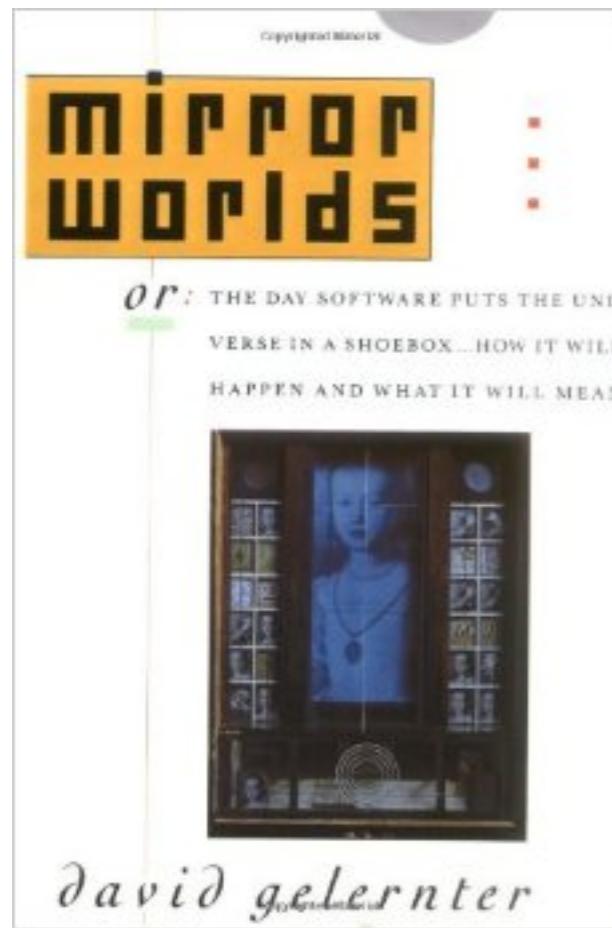
Picos Use an Event Query API



App Programming Model

- Program in any language you like
- Single Page Applications
- OAuth access to pico
- Pico provides
 - user data
 - processing
 - API and inter-pico communications





Events, Picos, and Microservices



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