# How APIs, Standards, and Customers Drive Software Genres into Open Source

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Geospatial Foundation

Two Models: Cathedral and Bazaar
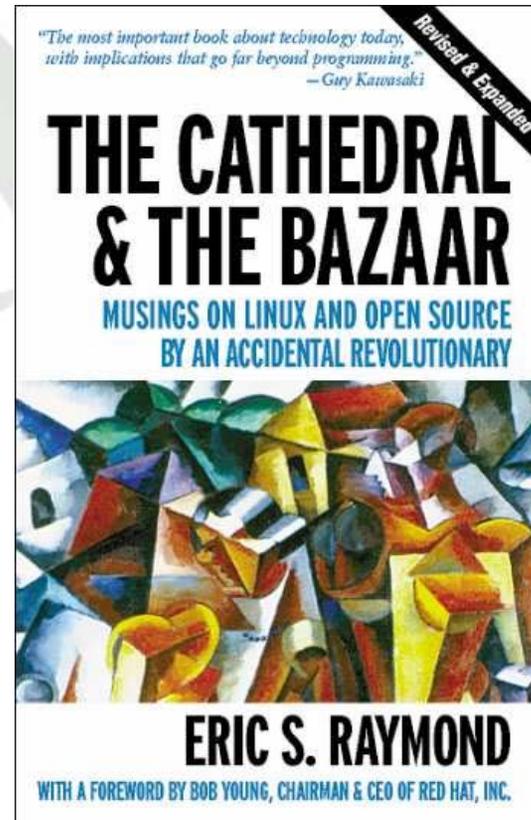
# Autodesk is a Cathedral?
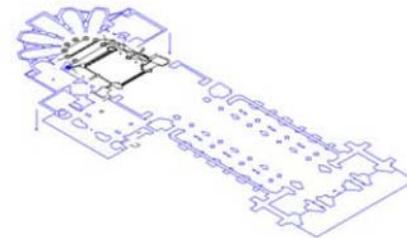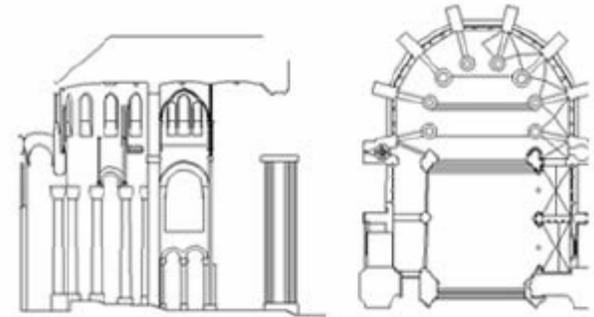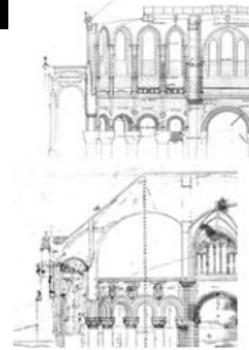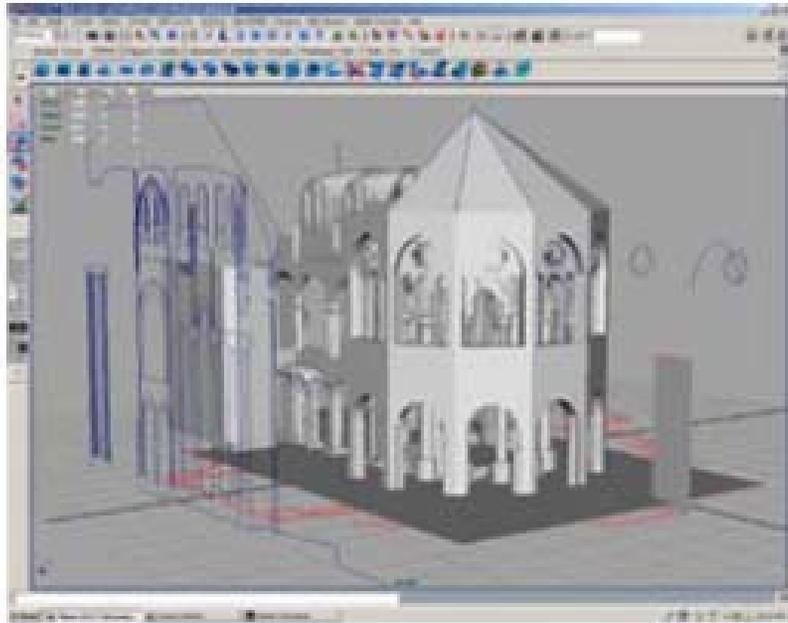
"Cathedral"

Webster says:

"The principal church in a diocese, so called because in it the bishop has his official chair (Cathedra) or throne. "

Our Bishop?
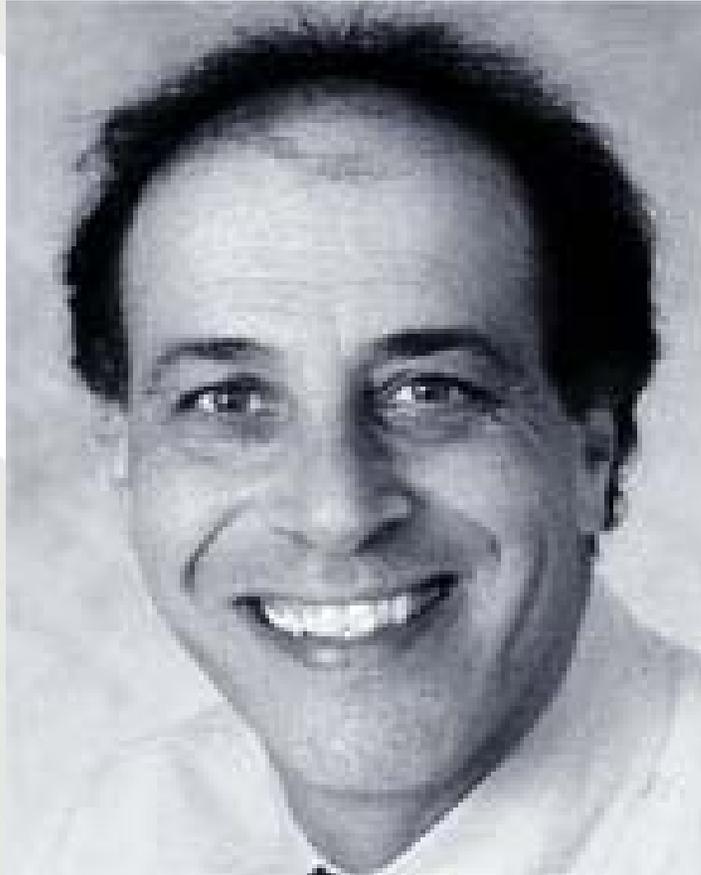
Successful closed source – The Cathedral
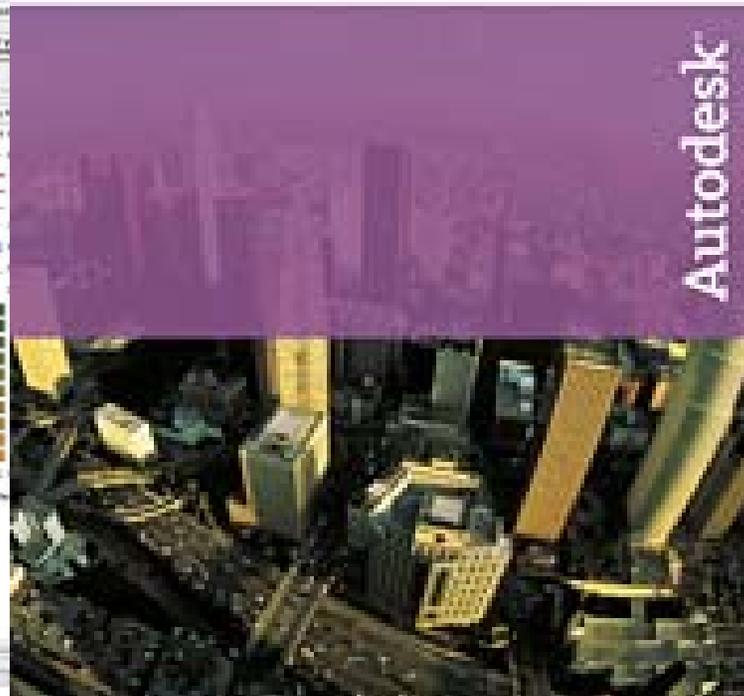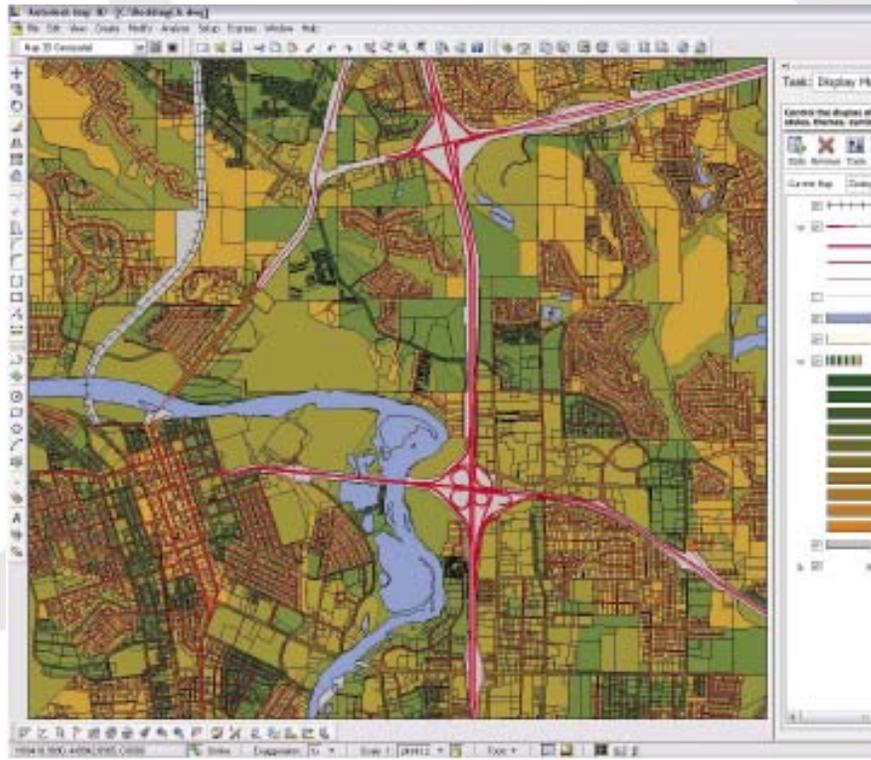
Successful open source – The Bazaar

The Geospatial Bazaar
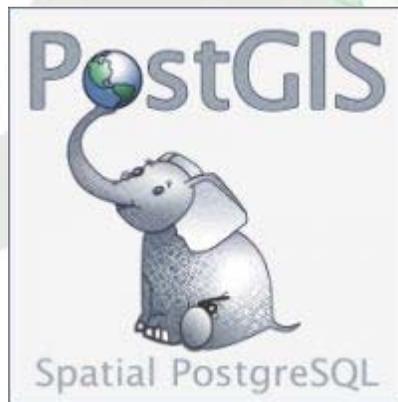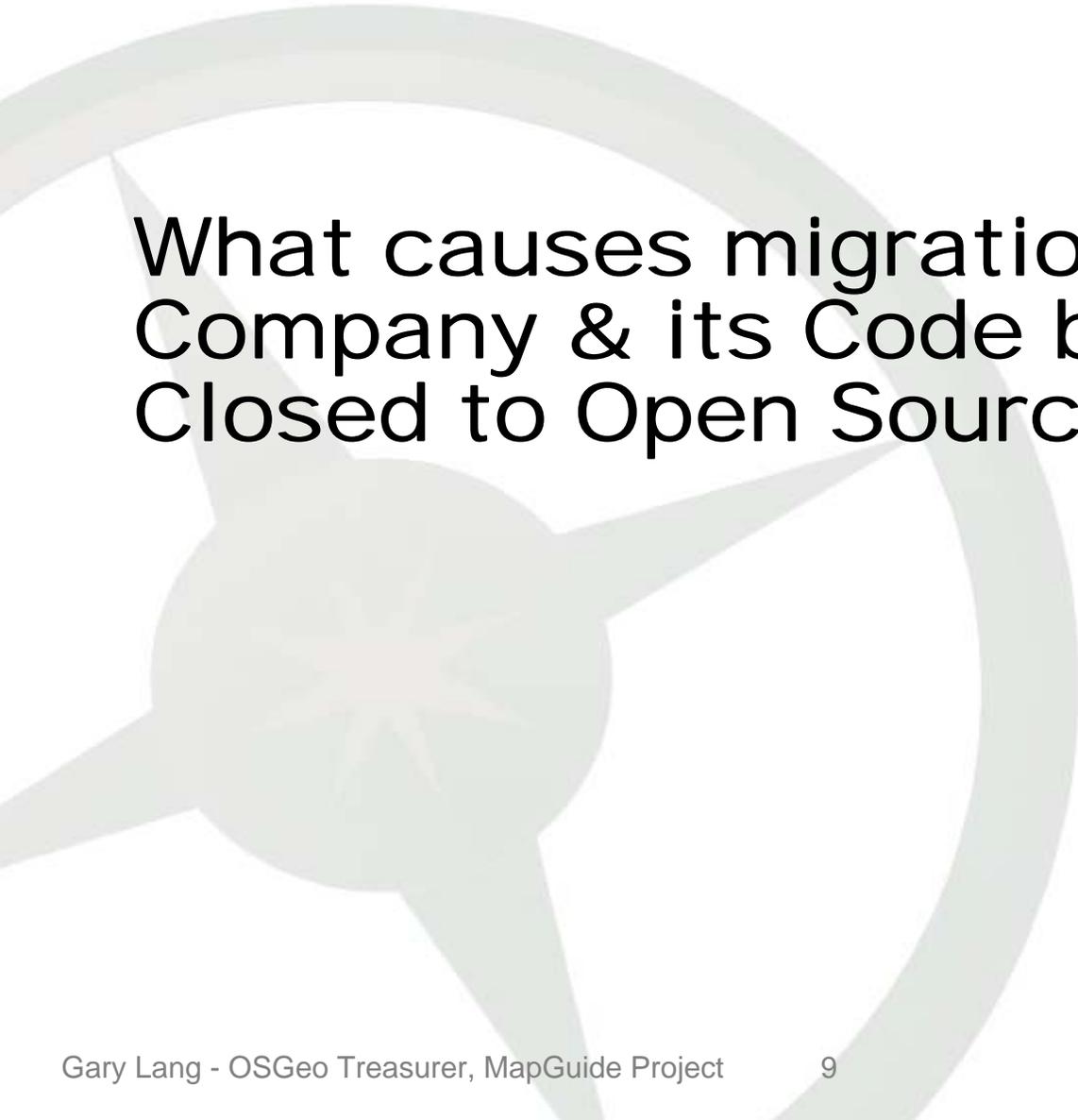
What causes migration of a Company & its Code base from Closed to Open Source?

Core

DEALING WITH DARWIN

HOW GREAT COMPANIES INNOVATE AT EVERY PHASE OF THEIR EVOLUTION

GEOFFREY A. MOORE

author of CROSSING THE CHASM & INSIDE THE TORNADO
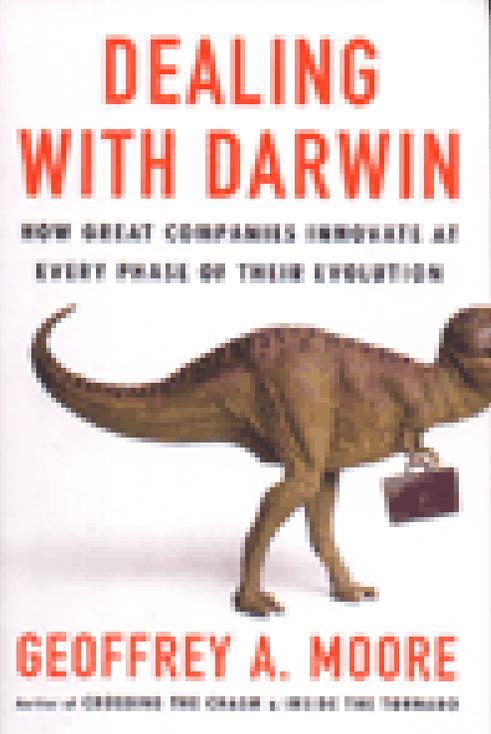
Context

Standards Facilitate, drive migration

- **POSIX, Unix culture -> Linux**

- **HTTP -> Apache**

- **SQL, ODBC, OGIS -> PostGIS**

- **GML, WMS, WFS -> MapServer**

What About Geospatial standards?

- **Geospatial was a latecomer to IT and many of the standards associated with modern IT**
  - **GIS used to be highly proprietary.**
  - **In 2005/2006 geospatial joined the mainstream.**
  - **Thanks to Google for generating the interest**
- **Geospatial is adopting standards by extending IT standards**
  - **SQL -> SQL/MM**
  - **XML -> GML**
  - **Web services: -> WMS, WFS, WCS, etc.**
- **Exceptions**
  - **GRASS has been here for a long time**

Open Source Geospatial Software

- **A "quiet secret", rapidly matured.**

- **MapServer is the number 2 web mapping application estimate 30K – 50K.**

- **Other examples: PostGIS, GeoTools, GRASS, etc.**

Geospatial Open Source Interest – B.G.
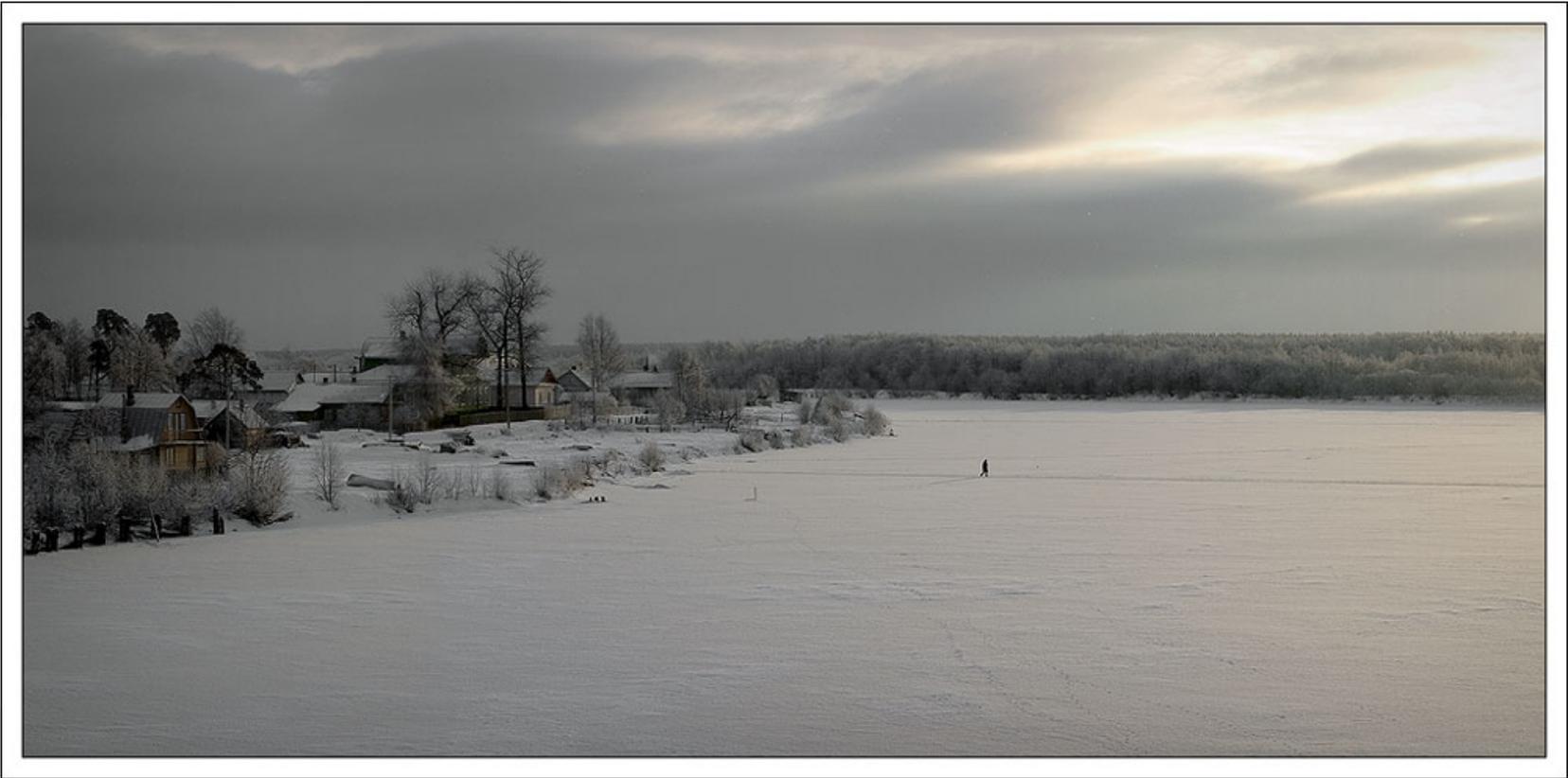
Then came Google Maps
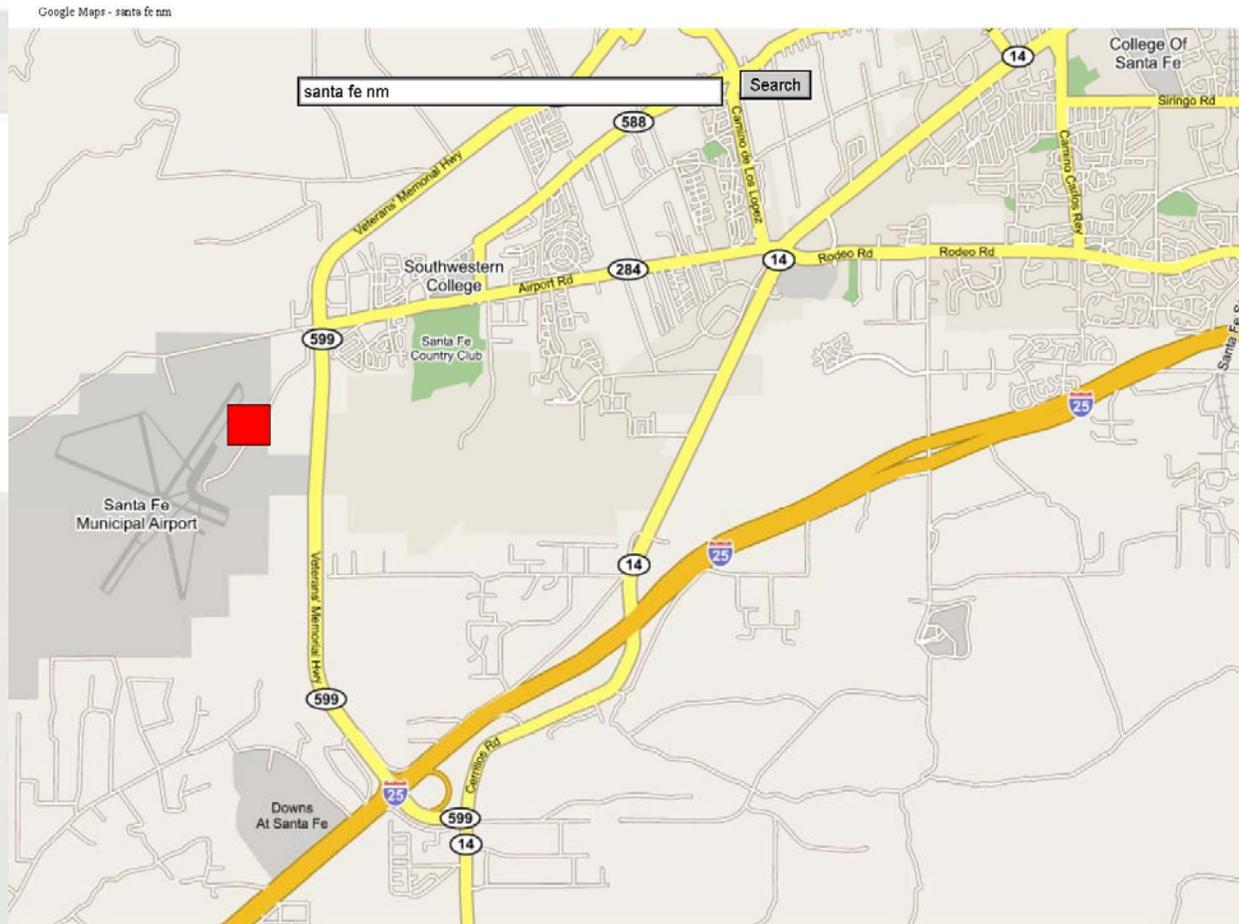
AND Google Earth Brings "Mirror Worlds" to the Masses
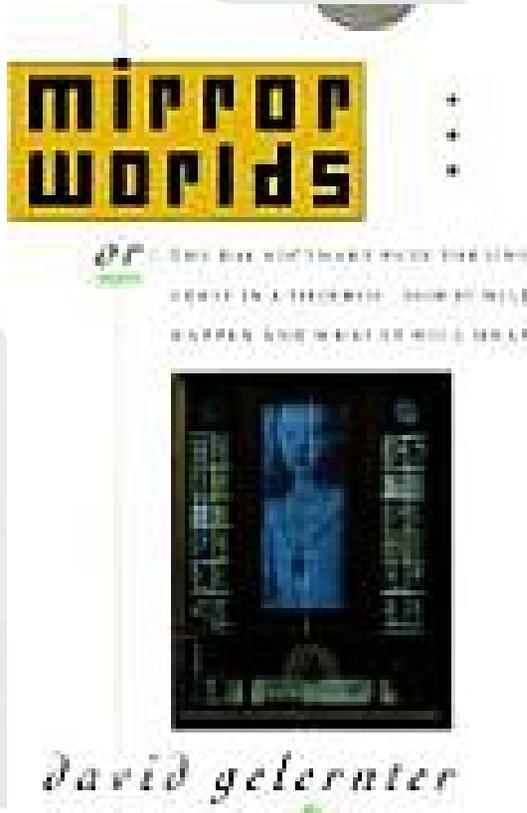
Mirror Worlds

"Imagine looking at your computer screen and seeing reality – an image of your city, for instance, complete with moving traffic patterns, or a picture that sketches the state of an entire corporation at this second.... These will soon be available to anyone.

David Gelernter 1991 "Mirror Worlds"

http://tinyurl.com/rpn2h

Open APIs

But…

When will the ads appear?

Hate MSFT

Love Google Labs

Yahoo Joins In

Mashups!

# Geospatial Open Source Interest – A.G.

Open Source Geospatial Software and Standards

- **Standard APIs have facilitated growth.**

- **Open web services including OGC WMS, WFS,**
  - **MapServer, Mapbender**

- **OGC Simple feature spec for SQL (SFS)**
  - **PostGIS/PostgreSQL**
  - **MySQL/MySAM spatial**

Geospatial Open Source Takes Off
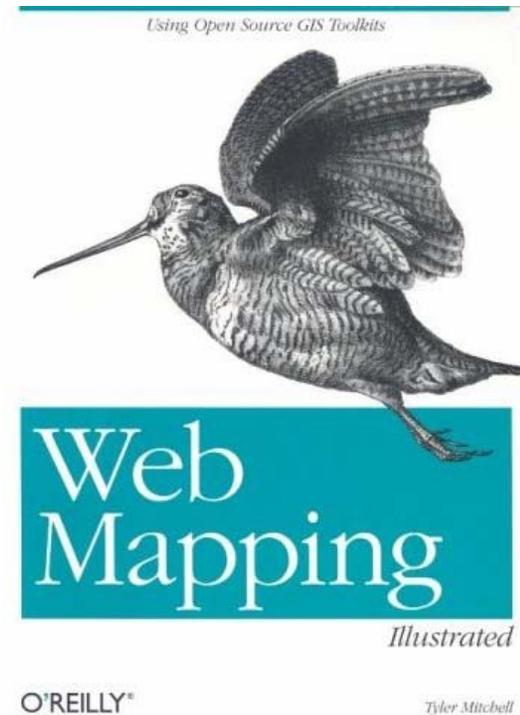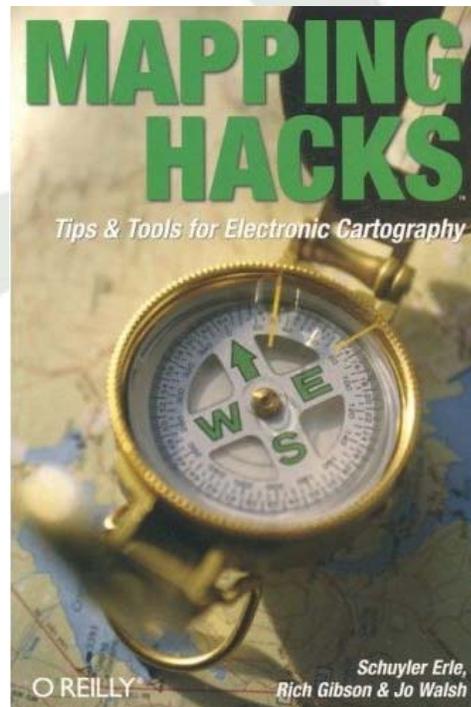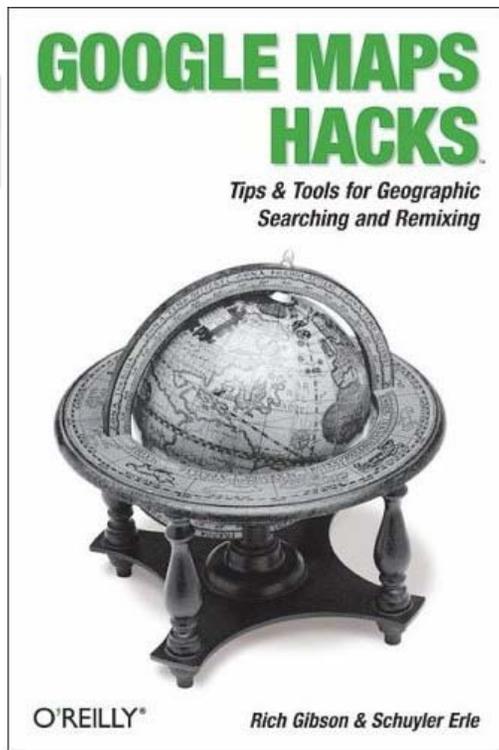
Autodesk goes Open Source

- **Why we did it**

  - **Our users wanted it (we're too slow)**

  - **It makes business sense for MapGuide**

  - **It makes business sense for Map**

  - **It makes business sense for Topobase.**

Standard APIs created commodization opportunities for web mapping

- **Drives closed source genres into open source genres**
- **Context (commoditization) is fertile ground for open source**

- **Standard APIs are closely associated with context, and move software genres into context from core.**

- **As standard geospatial APIs emerge (ISO, OGC, Google Maps 2.0,..) open source geospatial will become more ubiquitous.**

Questions?
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