Introductory Comments:

Presented for the Digital Mapping Techniques 2012 workshop, May 20 - 23, 2012, in Champaign, Illinois. Presentation was created and delivered by Jennifer Athey, Alaska Division of Geological & Geophysical Surveys (DGGS).

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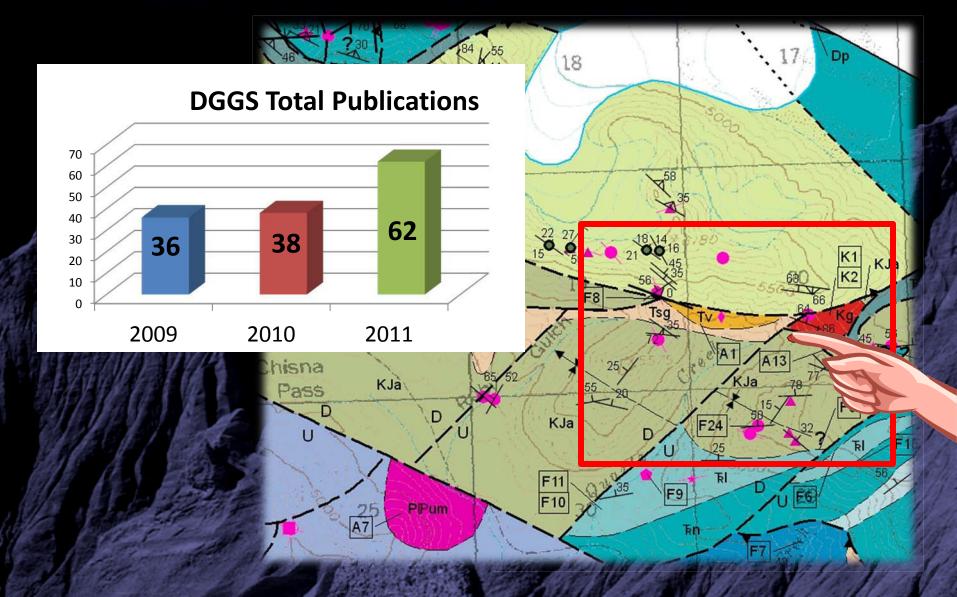In the absence of a speaker, slides have been annotated to improve clarity.

Evolution of web mapping applications at Alaska's Geological Survey as of 2012

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Digital Geologic Data is the Future

DGGS Total Publications

Year	Publications
2009	36
2010	38
2011	62

Available Tools

Open Source Software - overwhelming choice

- Open standards facilitate data interoperability
- People share code back to the community
- No vendor lock-in
- Lower maintenance cost allows for more staff funding
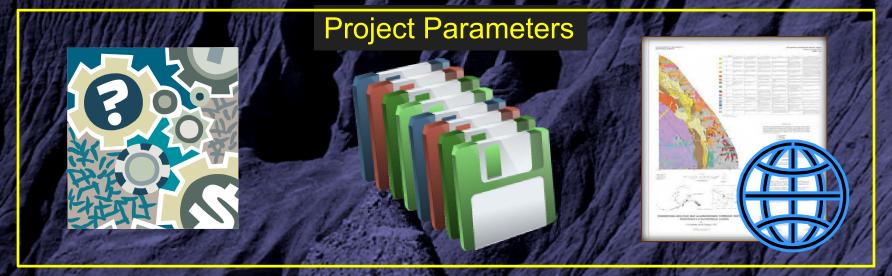- Data maintenance and outreach are manual

Commercial Software - ESRI's ArcGIS Server

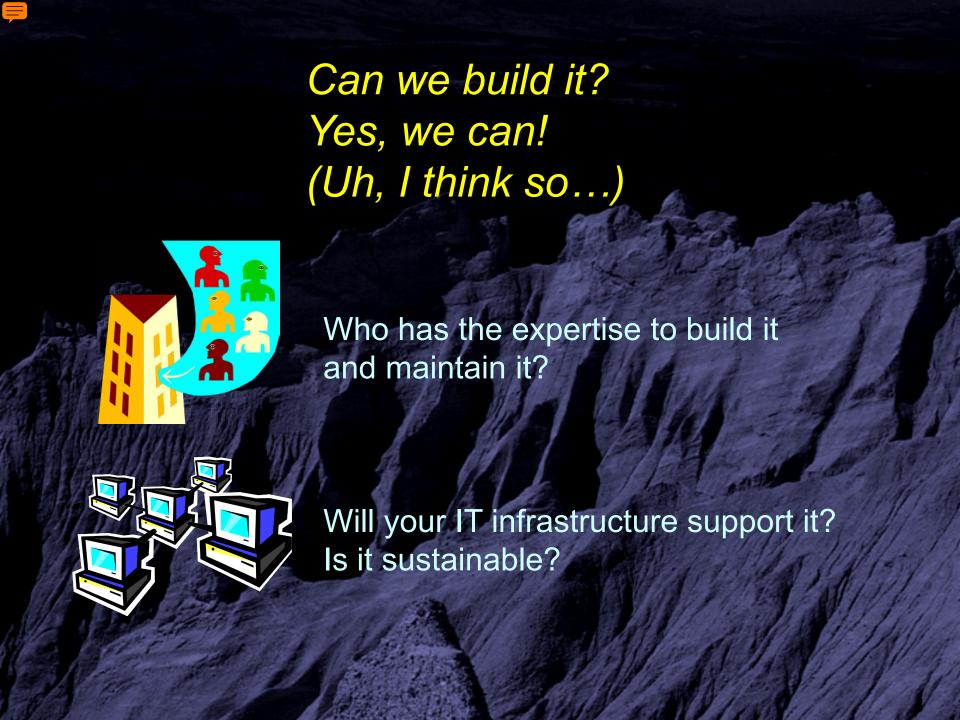- Users are already familiar with ESRI software
- Easy to implement
- Facilitates interconnected data
- Specific system and data requirements to meet

Factors that drive what tools to use

Available Resources

Project Parameters

Can we build it?
Yes, we can!
(Uh, I think so…)

Who has the expertise to build it and maintain it?

Will your IT infrastructure support it? Is it sustainable?

Geologic Map Index of Alaska - beta

Server [Oracle]

Connects via ActiveRecord (maps relational data to objects in programming)

Ruby on Rails 3.1

Sends out JSON feed to browser (standardized data exchange language)

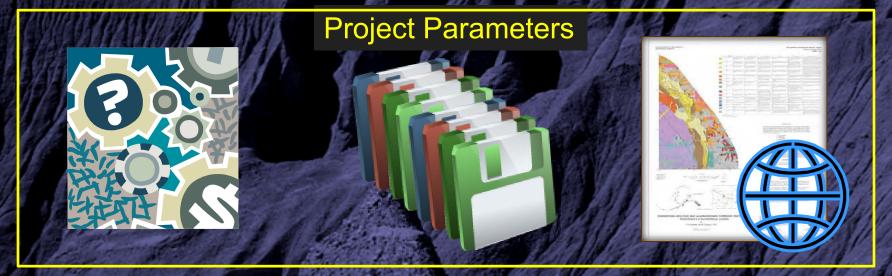**Client [Web Browser]**

Open Layers 2.11; Ext JS 4.1 (Extended JavaScript library) (user interface toolkits for web applications)

http://www.dggs.alaska.gov/mapindex/

Factors that drive what tools to use

Available Resources

Project Parameters

Flexibility is inversely proportional to
Ease of Development

Simple application, minimal to no programmer time, probably easier using ArcGIS Server solution

Complicated application, extensive programmer time, probably easier using Open Source solution

Alaska Geologic Data Index - beta

Server [Oracle]

Connects via Hibernate (maps relational data to objects in programming)

Java

Sends out JSON feed to browser (standardized data exchange language)

Client [Web Browser]

Open Layers 2.11; jQuery UI 1.6 (user interface toolkits for web applications)

http://www.dggs.alaska.gov/agdi/

Optimize data transfer to cut back on server hits and speed up user data requests

Server side

- Manages access to data
- Transforms data to make interpretable for client
- Indexes data

Client side

- Acts as front end to server
- Renders the data

Alaska Airborne Geophysical Data - beta

Server [ArcGIS Server] — Processes data and outputs services

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WFS/WMS — Interface standard

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Client [Web Browser] — Pulled down using JavaScript; displayed to user with Open Layers 2.11; jQuery UI 1.6 (user interface toolkits for web applications)

http://www.dggs.alaska.gov/gp/

As Yet Unanswered Questions

- When we start getting a lot of traffic, how will they perform?
- Is ArcGIS Server best tool for web maps?
- Do we need to switch to one type (philosophy of minimization)?

- Will serving out geodatabase data internally be successful?
- Haven't done Arc multiuser geodatabase yet…
- Implications for GIS storage in Oracle vs. an Arc geodatabase
- Move away from Oracle?
- Would Arc costs be feasible if State pulls funding?

No magic bullet

Do what's easier to get done…

Hire a programmer. Give them a dark room and lots of caffeine.

Photo by DGGS staff