Printing Interfaces

and how they affect Open Printing

Printing Interfaces

A lack of key, standardized printing interfaces stands in the way of wide-spread printing support

- Print System (Mobile)

- Print Dialog

- Print Graphics

- PDF manipulation

Printing Interfaces

Platform/ Element	OS X	iOS	Linux (Desktop)	Linux (Mobile)	Linux (Android)
Discovery	Bonjour	Bonjour	Avahi	Avahi?	jmdns (third-party)
Print Dialog	Cocoa	Cocoa Touch	GNOME/KDE/others	None	None
Other UI	Cocoa	Cocoa Touch	GNOME/KDE/others	Qt/others	Java-based
Print System	CUPS	AirPrint	CUPS	None	None
Graphics	Quartz	Quartz	X11/Cairo/others	Qt/Cairo/ others	Java-based
Print Graphics	Quartz	Quartz	Cairo/others	Qt/Cairo/ others	None
PDF Manipulation	PDFKit/ Quartz	PDFKit/ Quartz	bits and pieces	bits and pieces	None

Print System (Mobile)

- Still need a print system on mobile devices

- Much different focus than on desktop

  - Simple spooling and hand-off of jobs to printers/services

  - Status monitoring

  - Job control

- Needs to be separate from applications
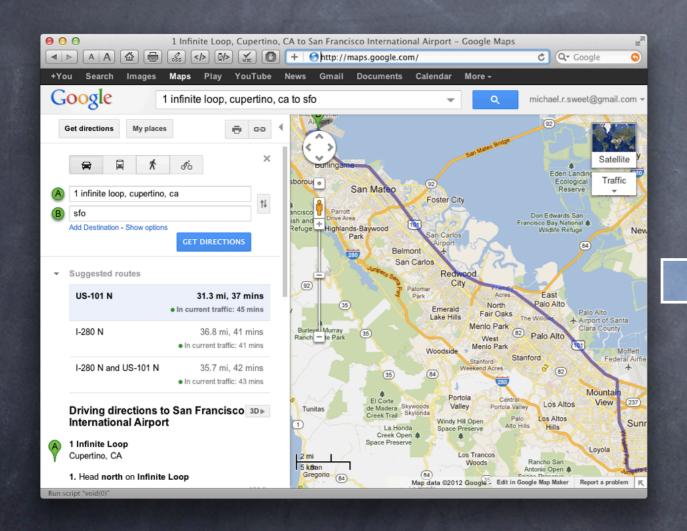
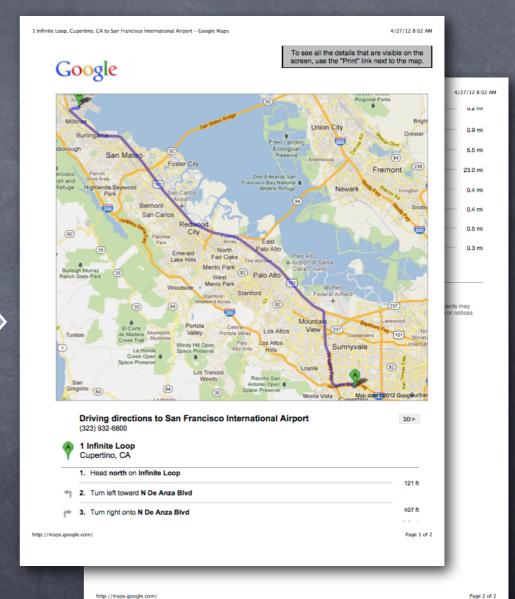- printerd a good example

Print Dialog

- Multiple print dialogs on desktop Linux

    - None of them using the D-Bus interface

    - D-Bus based common print dialog forever in design, may no longer meet the needs of current technology

- No "standard" print dialogs on mobile Linux

    - Everyone rolls their own

    - Lack of print system one likely cause

Print Graphics

- Existing PDF and JPEG files account for <50% of printing

- Applications often need to use two different APIs to produce graphics for display vs. print

  - Less of an issue on the desktop

- WYSIWYG isn't the driving force for mobile

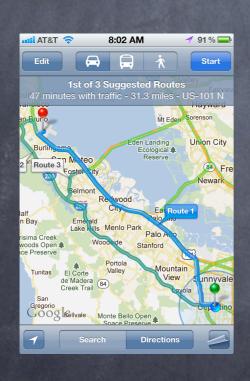 - But it still helps to draw with the same APIs and data

!WYSIWYG
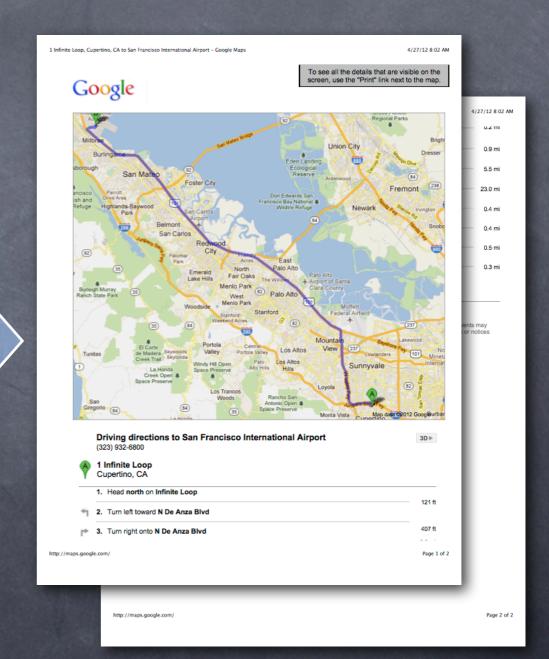
!WYSIWYG

PDF Manipulation

- Creation (write)

- Rendering to screen/bitmap (read)

- Subsetting for page-ranges (read and write)

- Imposition for number-up, same-up, watermarking, etc. (read and write)

- Flattening for transparency and deep color (read and write)

  - although this is less of an issue with newer printers

Summary

- Need mobile print system (a la printerd)

- Need standard print dialog interface (D-Bus) linked to at least one reference implementation

- Need common screen/print drawing APIs

- Need PDF manipulation APIs/tools