



E Q U I N I X

Interconnection Markets

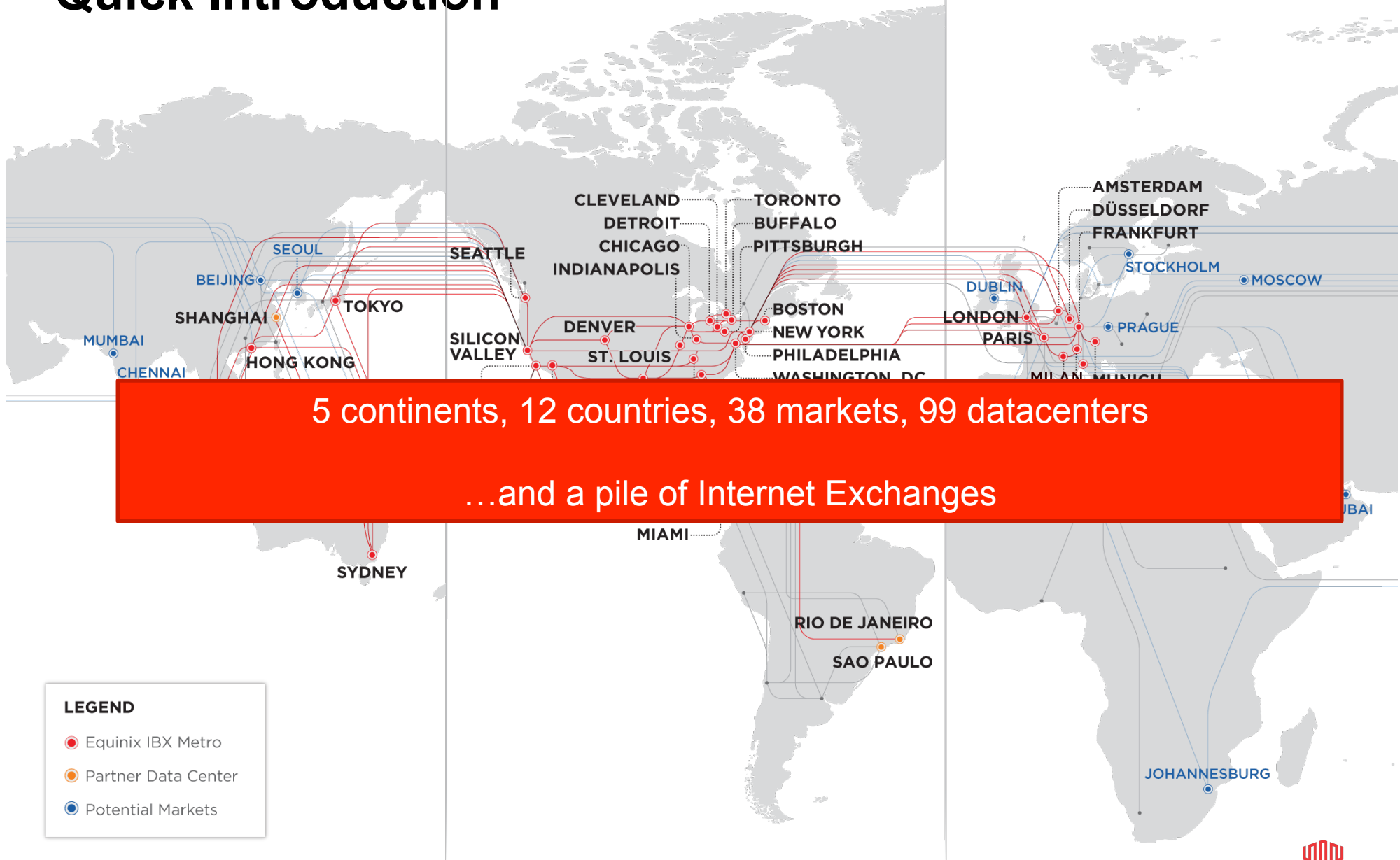
What Works & What Doesn't

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Quick Introduction



About me



The Price of Bandwidth, in bulk, per Mbps

Western Europe, early-mid 2011

A EUR80 fiber cross connect:	\$0.01
Internet Exchange traffic:	\$0.25*
Backbone traffic Western Europe:	\$0.50
Transatlantic traffic, wholesale:	\$1

Carrier Pigeon: \$2500 (est)

GSM voice call, national:	\$483,840
3G mobile data, roaming low:	\$834,000
3G mobile data, roaming high:	\$3,127,500
GSM voice call, roaming:	\$3,338,496
SMS Text Messages:	\$210,000,000
SMS Text Messages, roaming:	\$1,166,400,000

Caveat Emptor

- One man's success is another man's failure
- Local relevance is better than no relevance at all
- Building Interconnection markets is hard,
- Takes significant amounts of time and resources
- and inordinate amounts of cooperation

Definition time

A Healthy Interconnection market

- Has sufficient critical mass to be self-perpetuating
- Has at least a regional significance
- Minimizes duplication of effort

3 Basic Motivators

Why does a network expand its footprint?

- 1. Increase Revenue**
- 2. Reduce Cost**
- 3. Improve Quality**

These decisions are made

- For different reasons,**
- By different people,**
- In different parts of an organisation.**

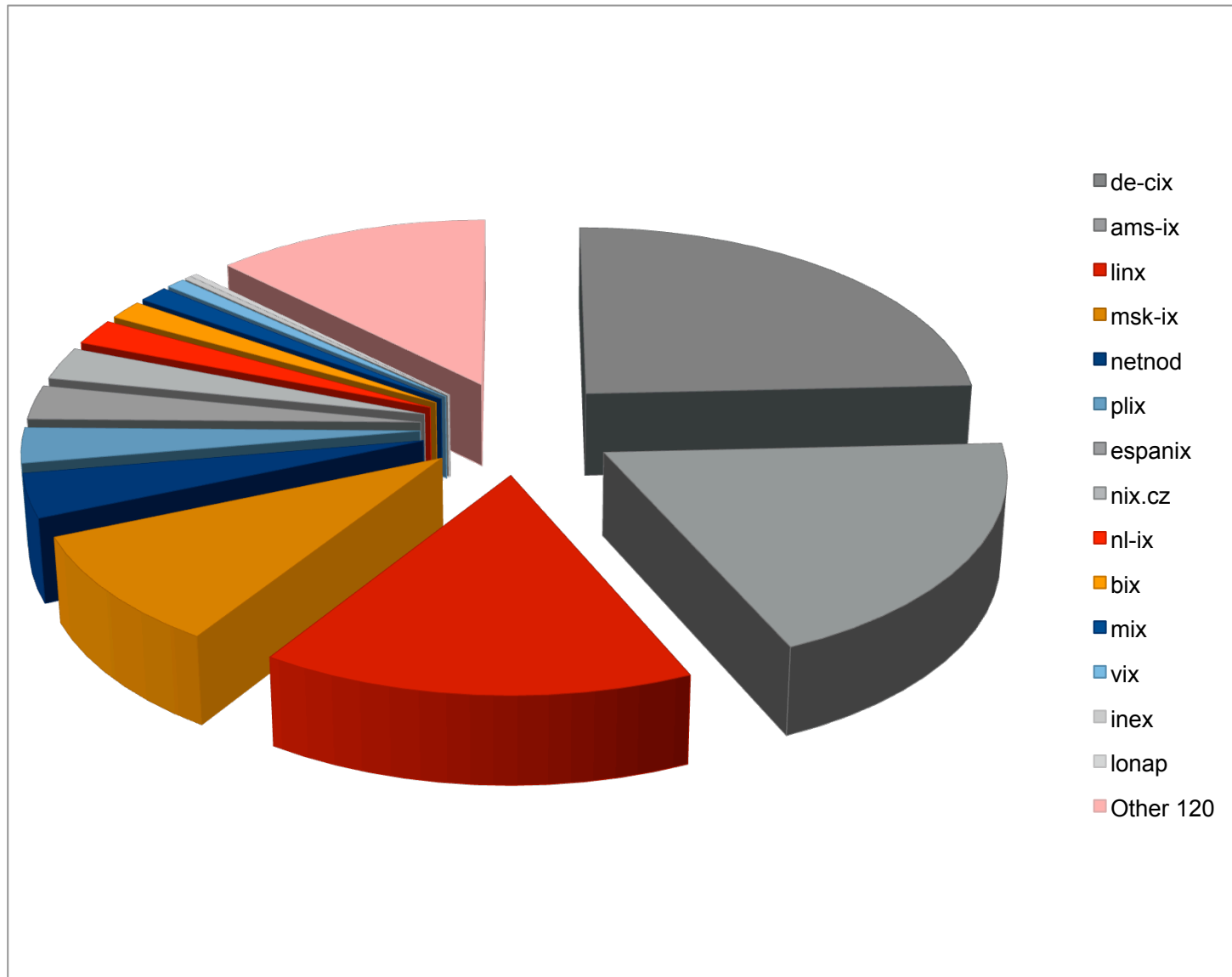
Where does it work?

- Singapore
- Silicon Valley
- Washington DC
- New York
- London
- Amsterdam
- Frankfurt
- Moscow (!)

And on a more limited scale:

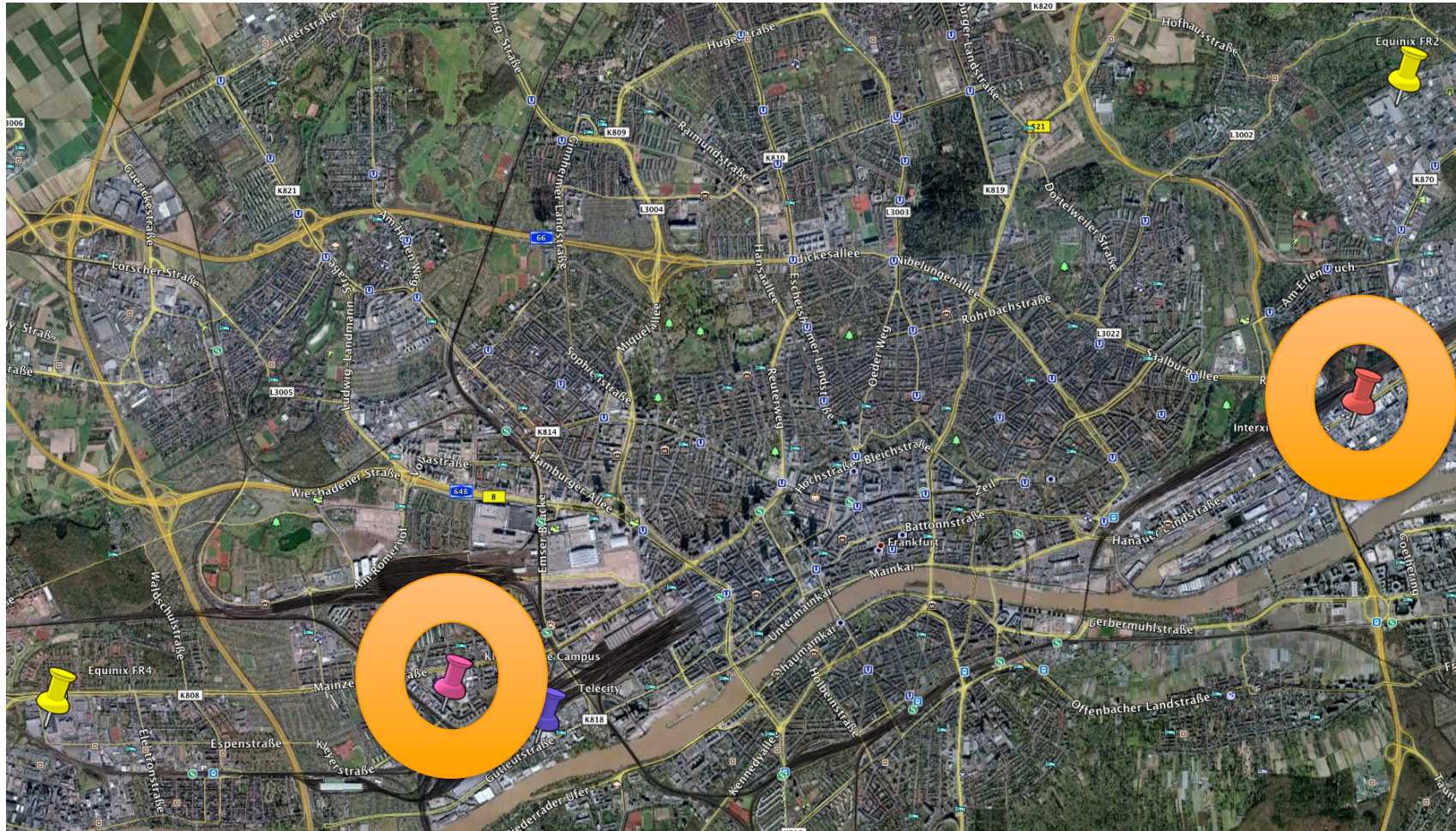
Stockholm, Prague, Budapest, Milan, Zurich, Madrid, ...

No seriously, where?



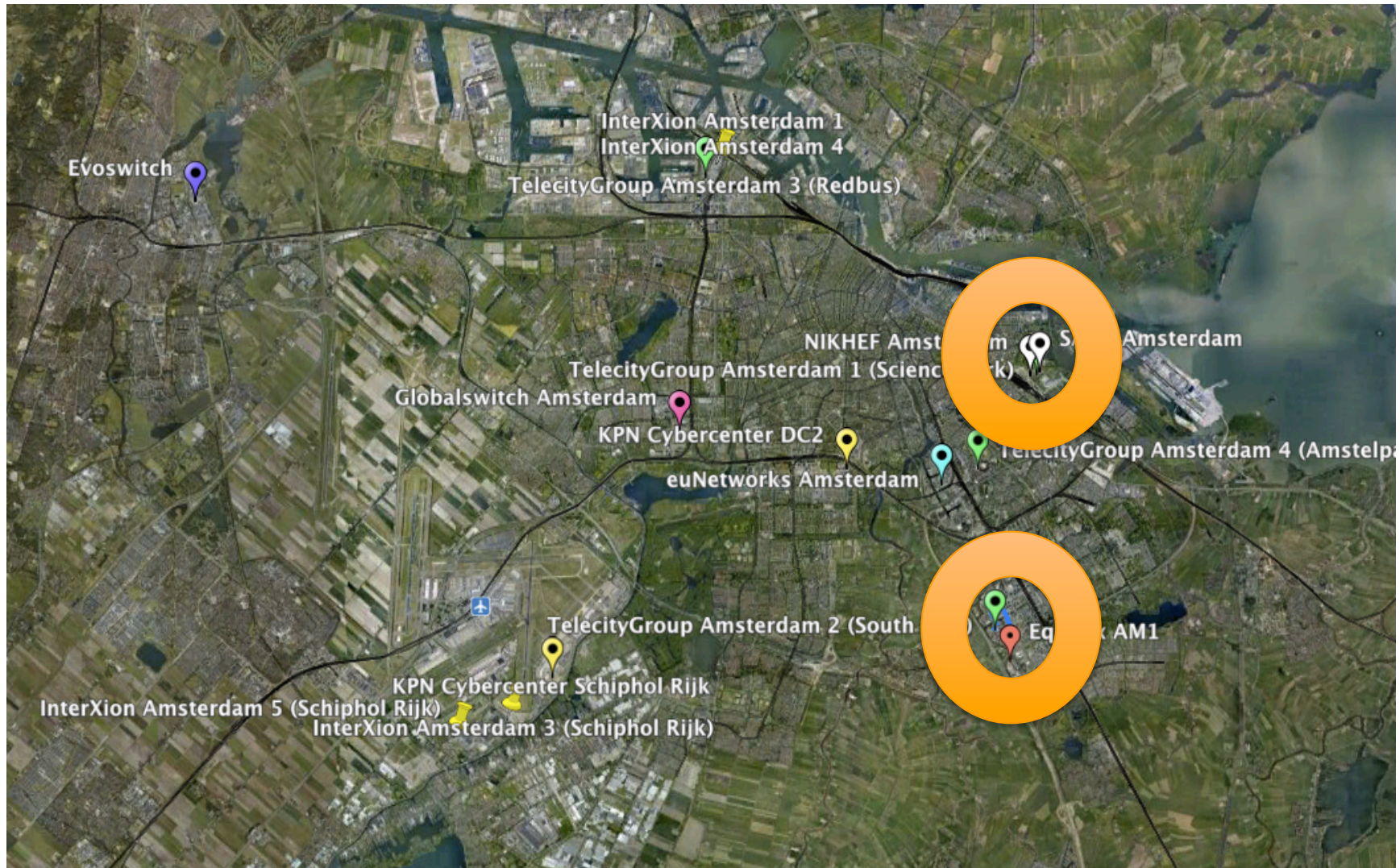
No seriously, where?

Take Frankfurt, for example:



No seriously, where?

Or Amsterdam:



Why does it work?

A Combination of

- Density
- Cost
- Regulatory framework
- Availability and Scalability
- Consolidated effort

Density

- Without density no gravity
- Without gravity no star
- Without star no black hole
- Without black hole no time travel (well, maybe)

Cost

- It has to Make Sense.
- Why do more people buy connectivity from a small city to a large one than the other way round?
- TCO wins.

Regulatory framework

- **Void where prohibited**
- **Deregulated telecoms is a big plus**
- **It's not just about laws**
- **How about rules like**
 - Only ISPs allowed
 - You **MUST** interconnect with everyone
 - “We’re doing this to screw up \$telco”

Availability and Scalability

- It's no good if it doesn't work
- It needs to be predictable
- Needs to be sustainable in the foreseeable future
- Expansion space for all is vital
- Retrofitting is almost always more expensive and more risky

Consolidated effort

You need:

- Space, Power and Local Connectivity
- Local/National eyeballs
- Transport providers
- National and International Content
- Carriers
- Foreign eyeballs

To work together to create a SINGLE interconnection zone

Conclusion

- **It's not about technology**
- **It's not even about drinking beer (much)**
- **There's no magic bullet**
- **Just a lot of hard work**