GRAND DUCHY OF LUXEMBOURG
Ministry of Foreign Affairs

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European Union Africa
Infrastructure Trust Fund

Where to peer?

Selecting an IXP

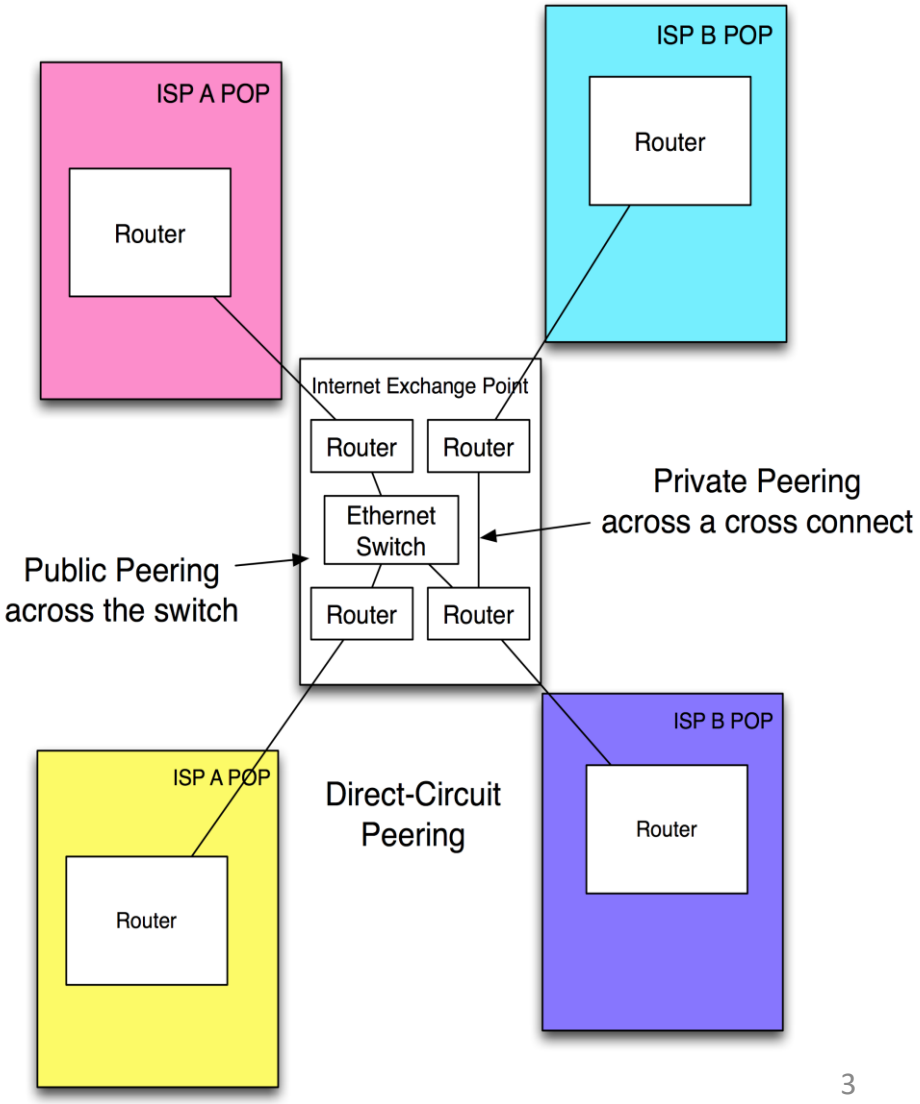
Internet Society™

How do network operators choose an Internet Exchange Point?

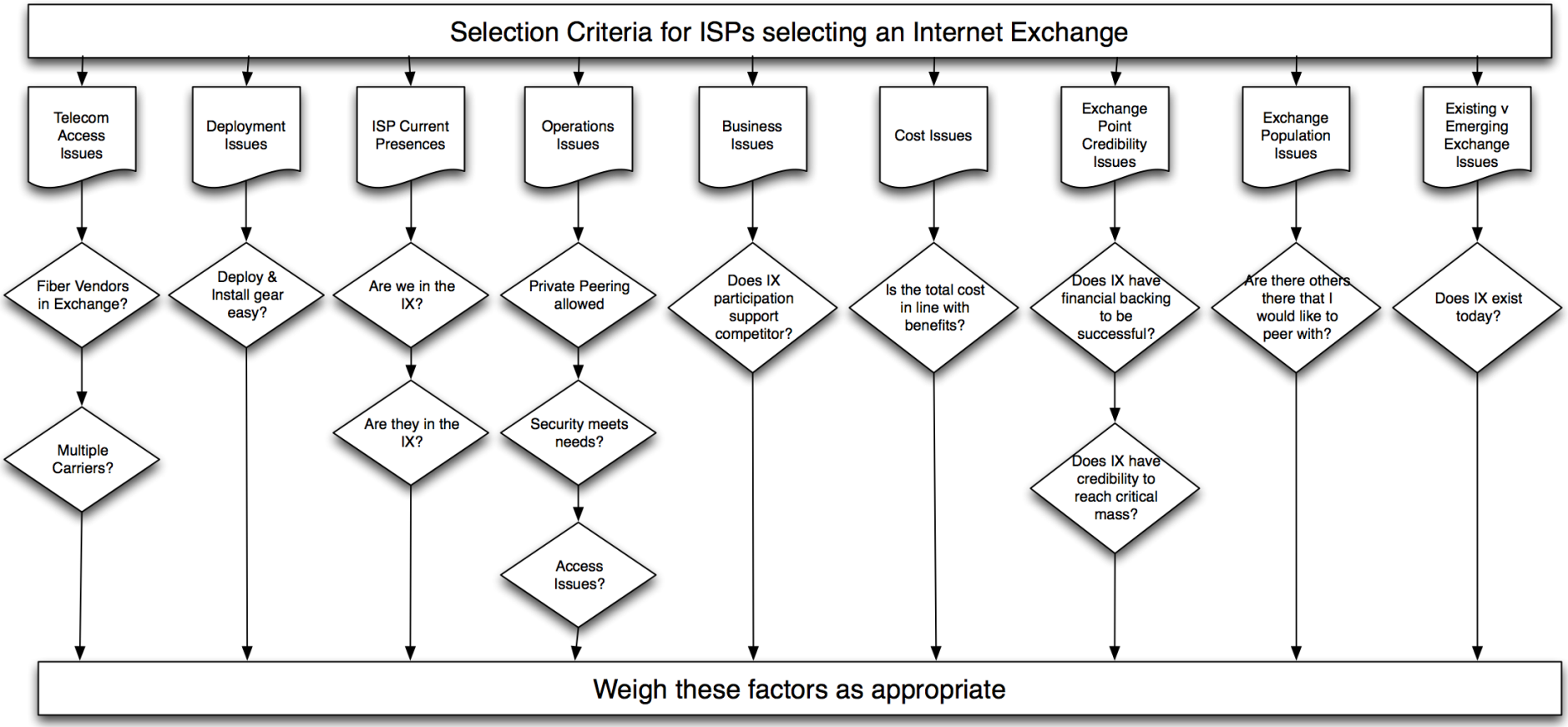
THE TOP 10 IXP SELECTION CRITERIA

Internet Exchange Point (IXP) Model

- **Definition**: An *Internet Exchange Point* is physical location where multiple ISPs interconnect their networks together.
- **Definition**: *Private Peering* is peering across a dedicated layer 2 circuit between exactly two parties, typically using a fiber cross connect at an Internet Exchange Point.
- **Definition**: *Public Peering* is peering between more than two parties, usually across a shared fabric such as an Ethernet switch.



The IX Selection Criteria



Typical IXP Selection Goals

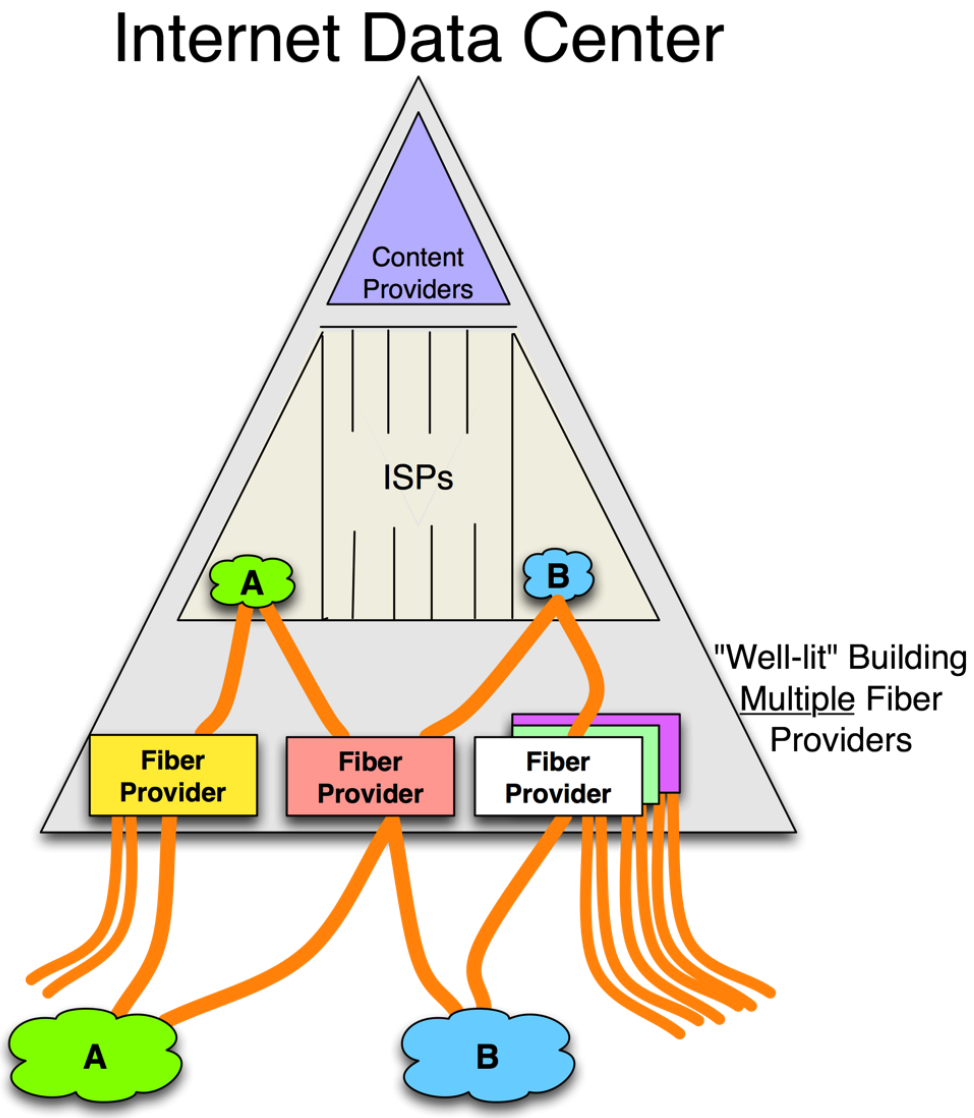
1. Get peering set up as soon as possible,
2. Minimize the cost of the interconnection and transit costs,
3. Maximize the benefits of a systematic approach to peering,
4. Execute the regional operations plan as strategy dictates (may be architecture/network development group goal), and
5. Fulfill obligations of a larger business arrangement.

The Top 10 IX Selection Criteria

1. Telecommunications Access Issues
2. Deployment Issues
3. ISP Current Presences
4. Operations Issues
5. Business and Legal Issues
6. Cost Issues
7. Credibility Issues
8. Exchange Population Issues
9. Existing vs New Exchange?
10. Internet Exchange Point Regional Route Strength

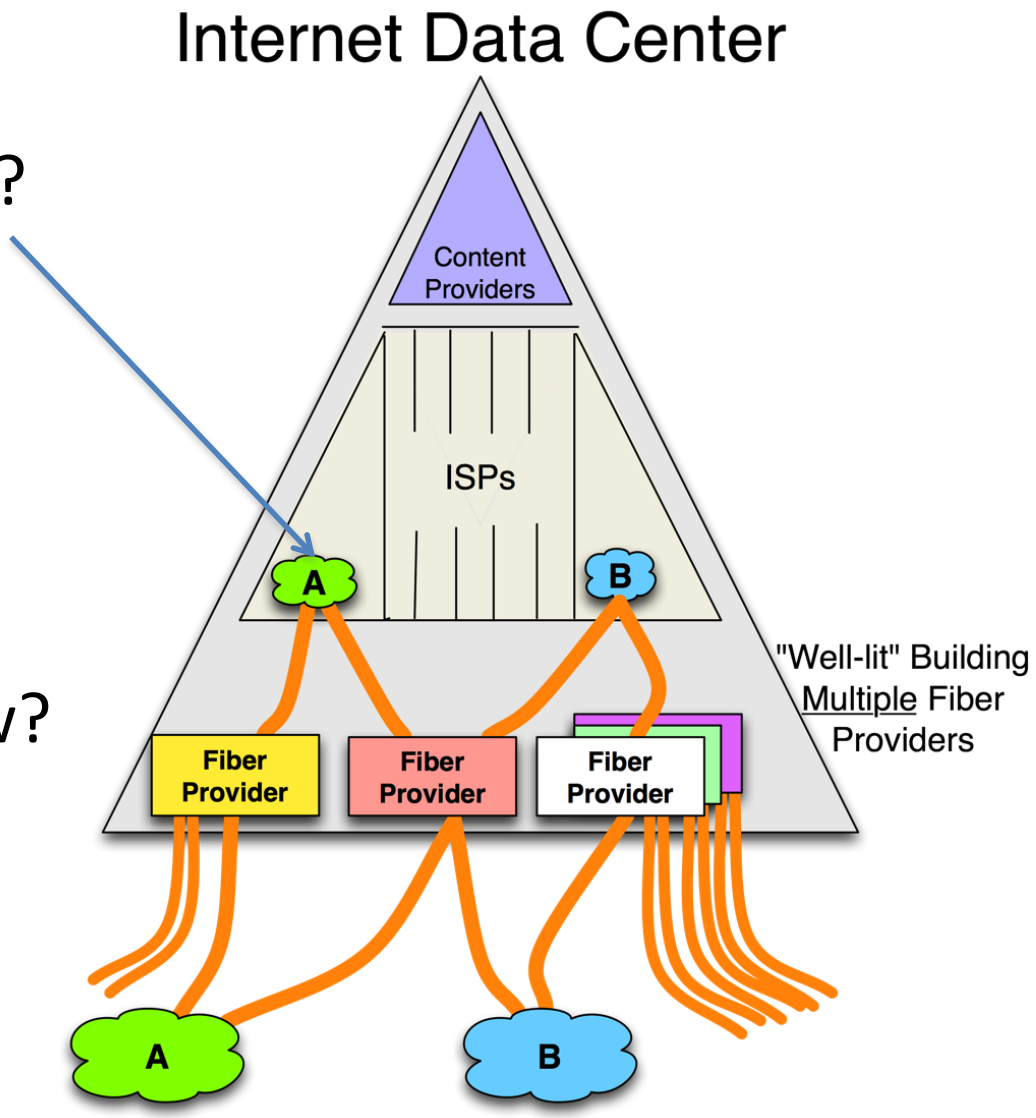
1) Telecommunications Access Issues

- Fiber, Wavelengths, Circuits, etc.
- Layer 1 and 2 preferred vendors
- Speed to provision access in?



2) Deployment Issues

- How get equipment in?
- Remote hands?
- Costs of deployment
- Space, power avail
- Drop ship?
- Sufficient capacity now?



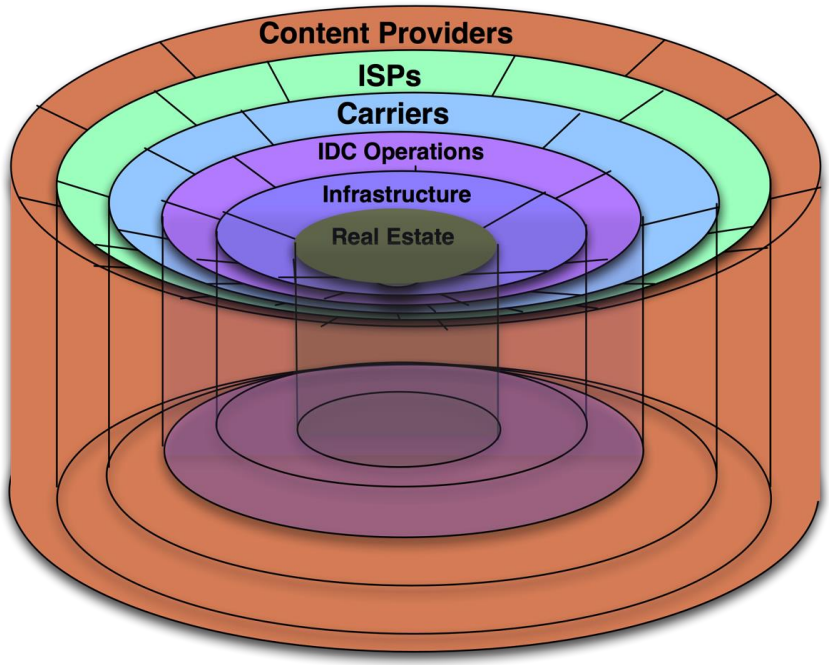
3) ISP Current Presences

- Get peering set up quickly

Preference	Me	You
#1	I am already Installed here	You are already installed here
#2	I am already Installed here	You have to build in
#3	I have to build in	You are already installed here
#4	I have to build in	You have to build in

4) IX Operations Issues

- Private Peering supported?
- Access? Security?
- Colo choice?
- Sufficient Capacity?
- Legal time for contracts?
- Upgrade space/power? ROFR



Bill Norton's Model of the Internet Data Center
Chapter 12 in The Internet Peering Playbook

5) Business Issues

- Supporting competitor?
- **Neutrality** – visitor and tour sheets available to colo and carrier sales
- Business interests impact the success of the IX
- Regulatory environment in effect has an impact as well

6) Cost Issues

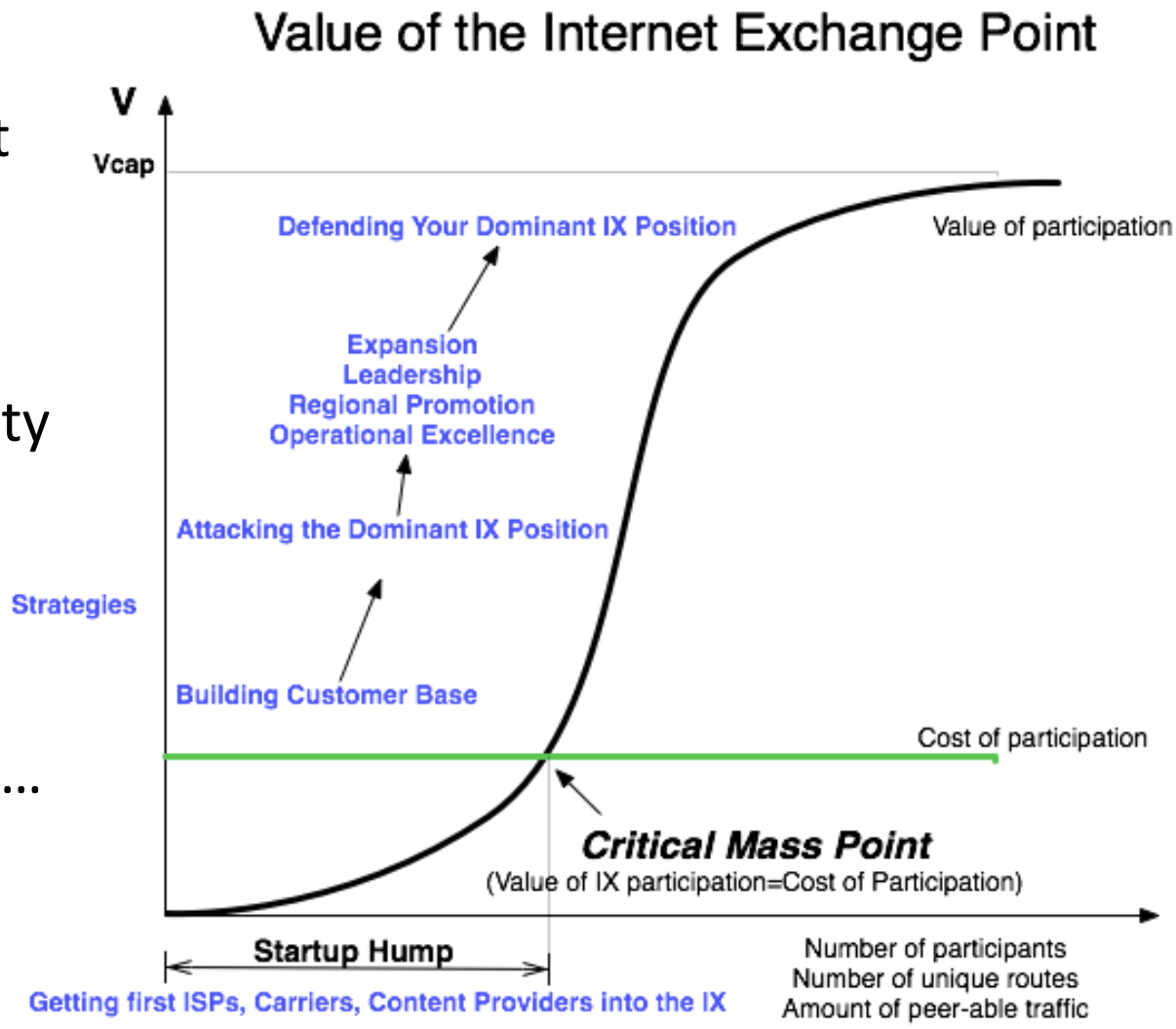
- Transport, Colo, Equipment, Port and install fees, etc.
- Minimize cost of peering, maximize value into the future (everything grows)

	Aggregate Value of Peering at the IX				-	Aggregate Cost of Peering at the IX			=Surplus Value of the IX	
IX	Traffic Volume Peered at IX (in Gbps)	*	*Transit Price ($/Mbps)	=$ that Would otherwise go to transit	-	Monthly Cost of Peering at IX	* #Member at IXs	=$ that go to IX	= Monthly surplus Value of the IX	Value : Cost Ratio
AMSIX	650		$5.00	$3,250,000		$3,206	300	$961,800	$2,288,200	3.4
DECIX	550		$5.00	$2,750,000		$4,500	286	$1,287,000	$1,463,000	2.1
LINX[1]	411		$5.00	$2,055,000		$2,700	317	$855,900	$1,199,100	2.4

7) Credibility Issues

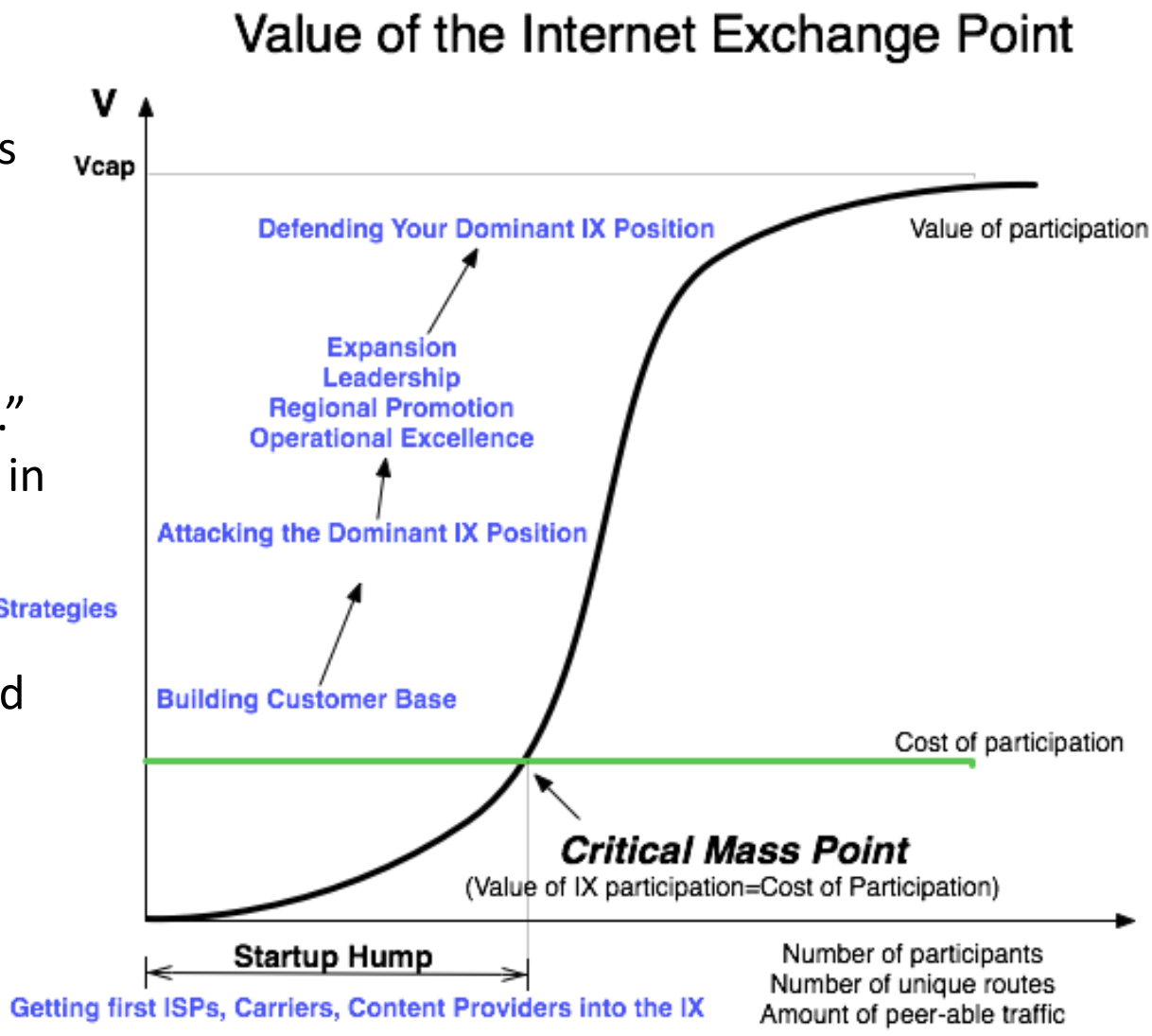
1. Will they ever reach critical mass? Does it have the financial backing to make it there?
2. Backing and credibility to attract the more valuable peering candidates.

Leap of faith that it will grow to critical mass…



8) Exchange Population Issues

- Who else is there? (Besides my target peer)
- Is there a transit sale possible?
- “Cost savings is cool but revenue generation is sexy.”
- Who will likely be at the IX in the future?
- When will the cost be less than the value derived?
- ISPs prefer a well populated IX over one trying to reach critical mass.



9) Existing vs Emerging IXP?

ISPs prefer an existing IXP
over an emerging one

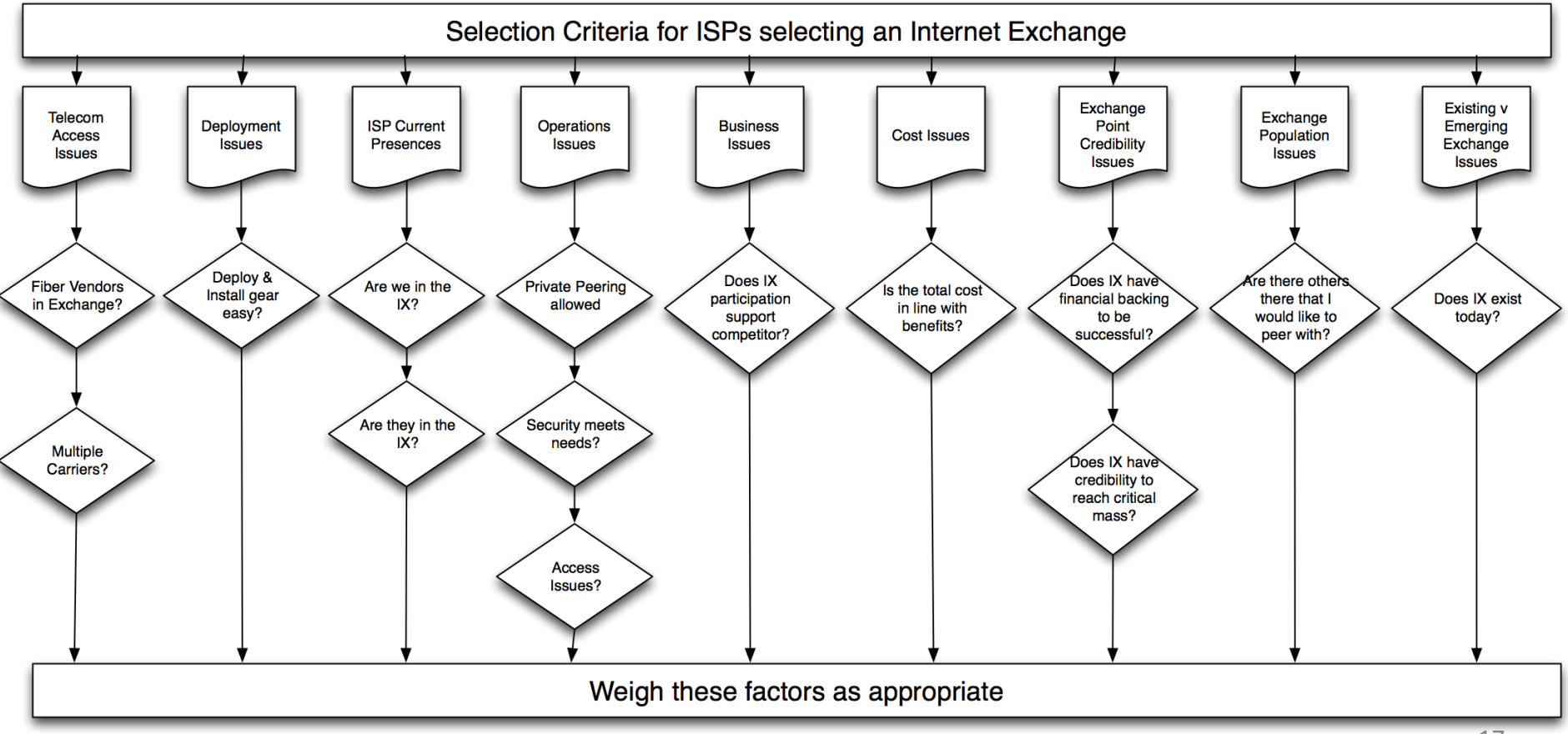
10) Regional Route Strength

Value of IX proportional to:

1. Number of participants
2. Amount of traffic Peerable
3. Uniqueness of routes
4. Some Regional IXPs are strong in access to different routes.
5. Example: DEC-IX for Eastern Europe, Middle East
6. LINX for U.S. and Western Europe

Weighting

- Varies widely across ISP



Questions

- If 100 ISPs were surveyed, which selection criteria would be most important?

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