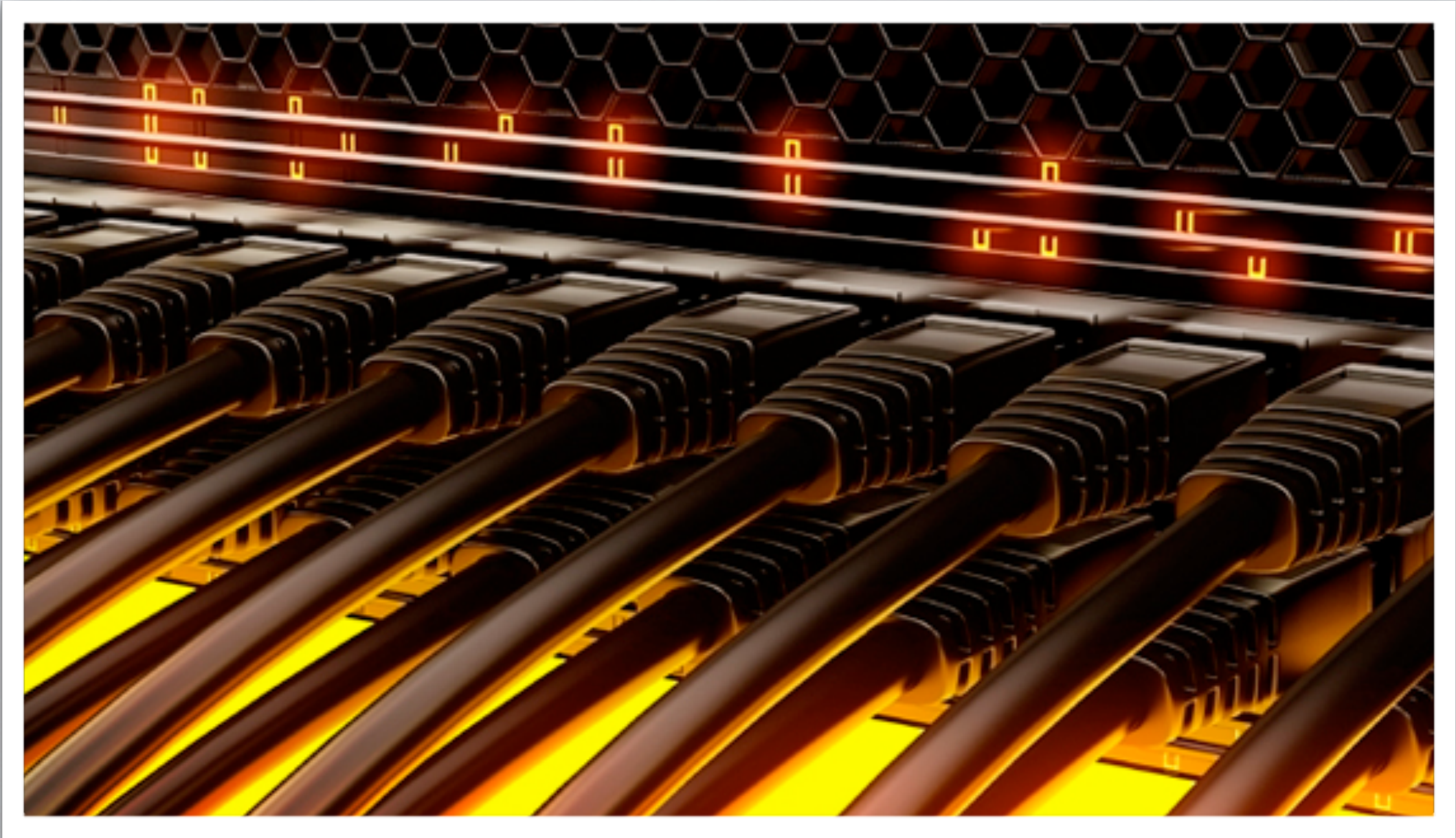# IXP...REDUX

THE FALLACY

THE RESULT

WHAT SHOULD I, AS AN IXP OPERATOR IN AFRICA, DO TO "SUCCEED" ?

EFFECTIVELY, YOU'RE ANSWERING THE OPERATOR-ASKED QUESTION OF: WHY SHOULD I CONNECT TO THIS IX?

LAYER 0 > ALL...

- Nothing operates without power !

- Have you specified your HVAC requirements? Including growth...?

- Does your facility measure up to the task?

POLICY & NEUTRALITY

- Case study: CINX (Cape Town)

  - 1997–2001

    - IXP location put out to tender, and peers do not want to move.

  - 2009 – …

ENGINEERS ARE NOT DESIGNERS

• Simple, easy navigable website showing overall statistics.

   • Automated provisioning of member stats.
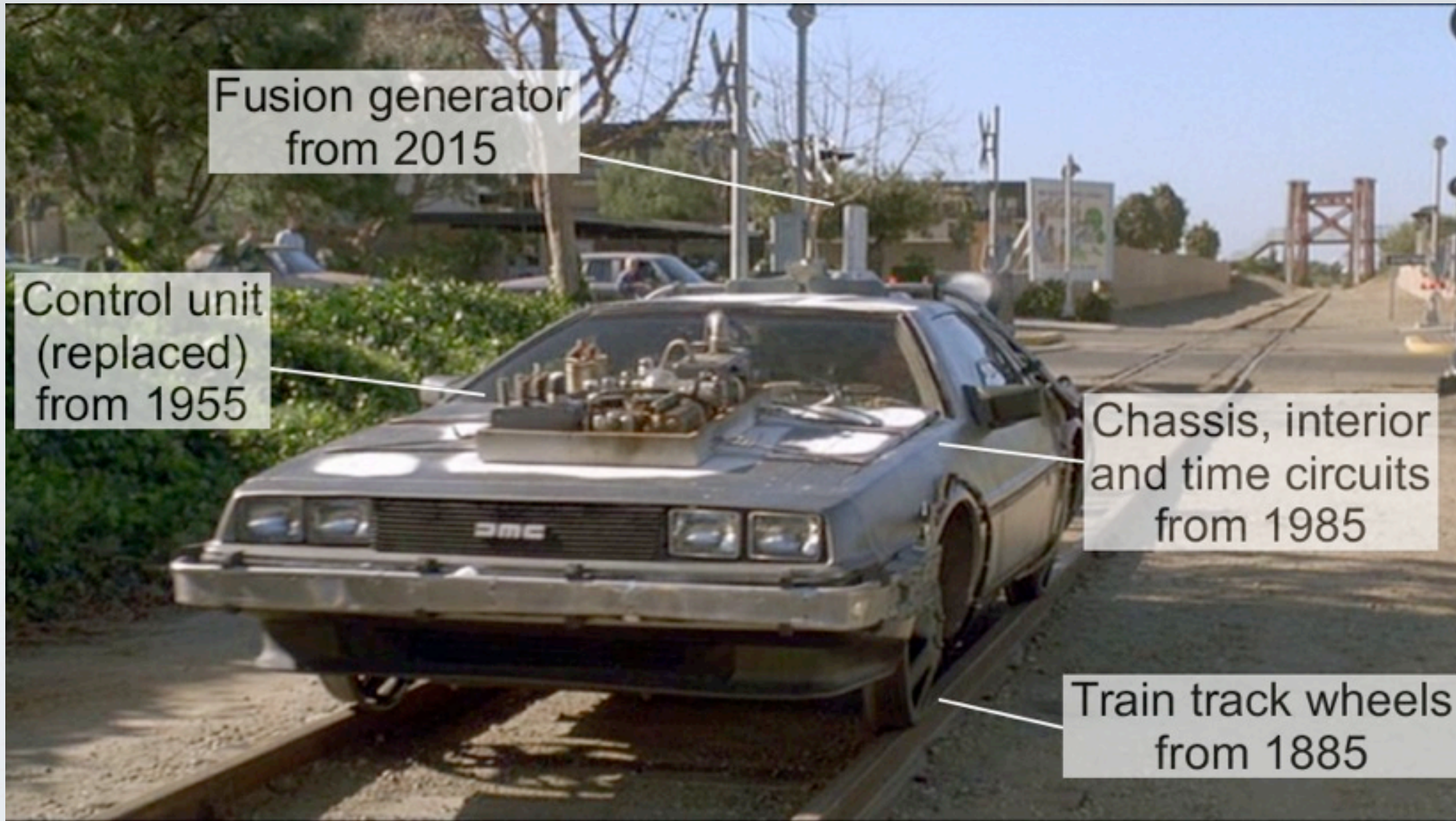
TELL ME HOW I GET CONNECTED ?

- A simple published interconnection policy (what it takes for you to get connected to the IX) is crucial.

ROUTE-COLLECTORS

- Peers and people at the IX that are likely to want to peer with you.

- Route collectors help you to find and debug problems that might otherwise be more difficult to find.

Fusion generator from 2015

Control unit (replaced) from 1955

Chassis, interior and time circuits from 1985

Train track wheels from 1885

THE GOOD...

- The INXes are run through a bottom-up community driven working group.

- Costs are kept lean! We operate as a non-profit, on a cost-recovery basis.

- No history of enforced peering !

THE GOOD...

- •Social networking 102.

- •Open, collaborative environment (IPv6 peering since 2001).

- •Implementation focused through working groups.

THE BAD...

#1 – To peer, you had to be an ISPA member.

There was no incentive for non-ZA operators to become ISPA members.

Requirement was scrapped in 2008.

THE BAD...

#2 – Assumed technical competencies.

Large ISPs typically know BGP well. Not all small/medium sized ISPs have the same skills...

Upcoming: BGP workshops

THE BAD...

#3 – We *expected* the INXes to run...(and they do...)

...but have become complacent in the community supporting it.

Build your *NOG / operator forum !!

OTHER USEFUL TOOLS

- monitoring & measurement

- AS112.NET

- anycast DNS operations

- route-servers for

- ntp

- looking glass

- voip vlans

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AS PART OF THE ISOC-RUN AXIS PROJECT, WE TRY TO TEACH SOME OF THESE...

LOOKING TO THE FUTURE

- Remote peering services (eg. *INXAnywhere)

- sflow analysis

- Private vlan services

- Routeviews

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SOME STUFF
IS DIFFICULT...

- Management tools

  - IXP Manager (INEX)

- Assistance from local and regional bodies (ISOC, AfriNIC, PCH, AF-IX)

Why do you have more than one IX in South Africa?

The reasons for building the first IXP, were absolutely valid, and made good business and technical sense.

The reasons for the second (and third) were the same...

Will you interconnect the IXes to build one big national IXP?

No. We operate Internet Exchange Points. We do not run a Telco, or ISP services. Our members do that...

If you do not mandate peering, is that not disadvantageous to the IXP ?

No. From our 16 years of experience, we have found that the peers tend to self-regulate, and arrange, and negotiate peering between themselves, as and when needed.

We provide a neutral platform...

INX_ZA