CARRIER NEUTRAL DATA CENTERS: TERMINOLOGY, SERVICES, OPERATIONS

Wouter van Hulten
Cross-connects and Data Centre Operations
African Peering & Interconnection Forum
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Wouter VAN HULTEN

1998 –
2008 –

INDUSTRY STATISTICS

3,000,000 In-house Data Centers in the USA

4,000+ Commercial Data Centers Worldwide

500,000 SQM Data Center space in Amsterdam

1,000,000+ Cross Connects
ENABLING THE DIGITAL ECONOMY

Understanding the industry enabling the “digital economy” provides a strategic advantage – enabling you to **connect**, **transact** and **create value**.

Part 1: Terminology & Services
AGENDA

1. Introduction
2. Terminology
3. Services
4. Q & A
Leading provider of cloud and carrier-neutral data centre services

- Founded 1998 – the first data centre operator to set up across Europe
- Headquartered in Amsterdam
- Listed on New York Stock Exchange (INXN)

Community
- Over 1,500 customers
- 500+ carriers
- 350+ cloud providers
- 400+ employees

Colocation
- 40 datacentres
- 89,000 Square Meters
- 96,000 MW power
- Cross-connects

Interconnection
- 20 Internet Exchanges
- Financial Hubs
- Content Hubs

Coverage
- 13 cities across 11 countries
- City centre, low latency locations
OPERATIONAL EXCELLENCE

Industry accreditations & memberships

Founding Member
European Data Centre Association

Patron
European Internet Exchange Association

Member
EuroCloud

Cofounder EMEA Chapter
Uptime Institute – availability, tier definition

Contributor Member
The Green Grid – energy efficiency

ISO 27001 & ISO 22301 Accredited
Information Security Management & Business Continuity Management

M&O Stamp of Approval
PAR3 & PAR5 data centres

ITIL V3-accredited Customer Service team
Continuity and service quality
In 2014, Interxion opened a datacentre in Marseille: MRS-1.
TERMINOLOGY
DATA CENTRE DEFINITION

- “A data centre is, in simple terms, a facility with the power, space and reliability to house computer servers. [...] A user – whether carrier, corporate or government – could use the data centre to run their own servers, IT applications, online services and disaster recovery (emergency back-up).”
  
  Source: Broad Group

- A carrier-neutral data centre provider is entirely independent of any network, hardware or software vendor.
DATA CENTRE COMPONENTS

- **Customer Space**
  - Shared Room
  - Private Room

- **General**
  - Reception
  - Coffee & WiFi area
  - Delivery and Storage area
  - Security room
  - Operations Centre
  - Helpdesk
  - Office Space

- **Technical Areas**
  - Transformer
  - Generator
  - Main Switchboard
  - UPS
  - Battery
  - Fuel storage tank
  - Chillers
  - Pumps
  - Water tank
  - Gas storage
  - Meet Me Room
  - Building Entry Point
DATA CENTER CATEGORIES

IN-HOUSE
- Real estate focus
- Limited connectivity choice
- Limited flexibility

WHOLESALE

NETWORK OPERATED
- Application outsourcing model
- Data Center as add-on service
- Limited connectivity choice

MANAGED SERVICES / CLOUD

CARRIER & CLOUD NEUTRAL
- Data Center is prime focus
- Strong Communities
- Rich Interconnection
CORE, EDGE & ACCESS

<table>
<thead>
<tr>
<th>Core</th>
<th>Edge</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER</td>
<td>LOCATION</td>
<td>USERS</td>
</tr>
<tr>
<td>100 – 200 MW</td>
<td>Remote</td>
<td>Few</td>
</tr>
<tr>
<td>2 – 50 MW</td>
<td>Metropolitan “Hub”</td>
<td>Many</td>
</tr>
<tr>
<td>0,5 – 2 MW</td>
<td>Local</td>
<td>Few</td>
</tr>
</tbody>
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<10 | 10 – 100 | 1 – 3
Microsoft, Dublin
July 2009
Phase 1: 330,000 ft² / 39,657 m²
5.4 MW growing to 22MW
Apple, Maiden NC
Spring 2011
Holder Construction
500,000 ft² / 46,000 m²
INTERXION FRANKFURT, HOME OF DE-CIX
Interxion FRA-1, Frankfurt
1999: 500 m²
2012: 15,000 m²
INTERXION PARIS 5

Interxion, Paris 5
RFS: 2009
43,000 ft² / 4,000 m²
16 MW
INTERXION PARIS 7
Celeste, Champs sur Marne, France
RFS: 2011
enia architectes
Net 9,687 ft² / 900 m²
SHELL, PRE-FABRICATED, CONTAINER?

- **Shell** – Anyone selling industrial / commercial property

- **Build to Suit** – Construction companies

- **Pre-Fabricated** – Datacentre specialists, construction only

- **Modular Container** – Container based solutions

- **Managed Wholesale** – Real-estate background

- **Managed Commercial** – Datacenter operators
MAINTENANCE & OPERATIONS

- Standard Operational Procedures
- Maintenance, Upgrade & Testing
- Site Monitoring
- Security & Crisis Resolution
- 24 x 7 Customer Service Center
WHY OUTSOURCE YOUR DATA CENTRE?

1. Scalable capacity helps you stay agile

2. Maintain business focus

3. Skilled engineers on demand
SERVICES
SERVICES

- EQUIPMENT
  - HOUSING
  - OR
  - COLOCATION

- INTERCONNECTION

- HANDS & EYES
CABINET

- 600 x 1060 footprint = footprint 2,5 m²
- 42 HU

- Blanking panels
- Cold aisle containment

- Basic level PDU
- Power added separately

- Lock

- Power under raised floor
- Data cabling overhead
MEET ME ROOM
WHY COLOCATE?

1. Reduce costs
2. Reach and location
3. The right connectivity
INTERCONNECTION
CROSS CONNECT

Direct connections to partners, suppliers and customers in the same or nearby data centres
## INTERCONNECTION EUROPE v. US

### EUROPE
- **Cross-connect or private peering**, generally inexpensive
- **Not-for-profit IXPs**
  - Public IXPs providing interconnection services to members at cost
  - Typically hosted in data centers of multiple datacentre operators
- A few private IXPs operated by data center operators

### US
- **Cross-connect or private peering**, generally expensive
- **Commercial IXPs**
  - Typically operated by interconnection data centers, single datacenter operator
- **Not-for-profit IXPs**
  - Smaller cities
  - European IXPs expanding to USA: LINX, DE-CIX, AMS-IX

*Source: Wall Street Journal, 29 October 2014*
Private peering costs in the US are up to six times higher than in Europe.

WHY INTERCONNECT?

1. Connect to your business partners

1. Lower your networking costs

2. Reliability and scalability of your infrastructure
QUESTIONS FOR DATACENTER OPERATOR

1. Do you offer you the flexibility needed for our future requirements?

2. What about your location?

3. How much experience do you have?

4. Are you well connected?

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THANK YOU