Is there an elephant in the room?

- Arguments typically used against outsourcing of IT
  - We need to keep the equipment in-house, for physical access.
  - It is cheaper for us to have it here…
  - It is not secure anywhere else…
  - This cloud thing will pass…
  - We are so special…
- Lack of metrics
- Lack of clarity on cost
- Compare apples to apples
- Mix and match.

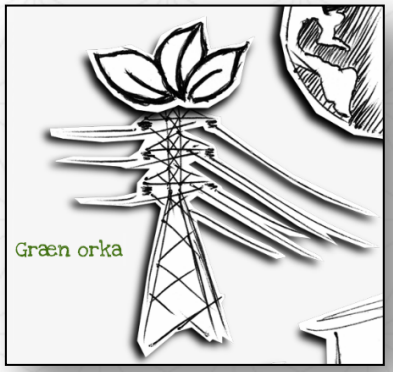
10 Signs you might be a Server-Hugger

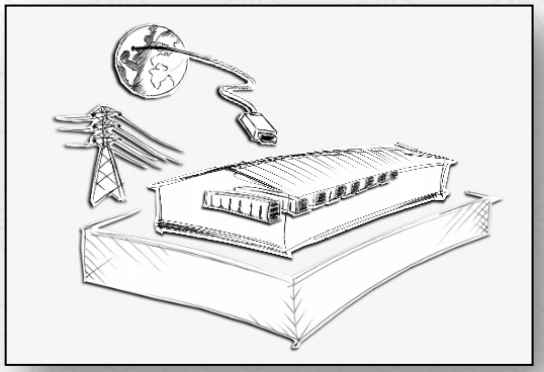
- 1. You enjoy large air-conditioned rooms, lit only by strip lights, devoid of all soft furnishing. The rows of metal boxes or racks will appeal to your organized side. The constant hum and fizz of white noise relaxes you.
- 2. Using a fingerprint or hand biometrics to gain access to rooms still excites you.
- 3. You can't walk past messy or disorganized cabling (of any kind) without tutting and shaking your head
- 4. When you apply patches to your servers or application you can't help but think services take longer to start when you watch them.
- 5. You believe any 'progress bar,' especially the blue ones, have built in anxiety detectors. The more anxious you get the slower they go.
- 6. Blinking green or yellow lights have a calming effect as you look at them, almost hypnotic. Red ones give you that 'ohno second' feeling. You would go out of your way to buy things with blue LEDs
- 7. You like the feel of cold rackable metal boxes. You touch them often.
- 8. You're thinking Cloud is the same as virtualization, something we should take a look at sooner or later, but for now you have users to deal with.
- 9. You believe there is no security applied to Cloud data, regardless of what the vendor tells you.
- 10. You have half thought about Araldite up your users' USB ports to stop them plugging things in.
- 11. (One for luck): You worry about all those servers and boxes and applications and green lights and red lights, but secretly you just need a big Cloud hug.

If you or someone you know if affected by this problem or you recognize more than six of the symptoms you should consult us straight away for the only known cure.

HPC for Europe, where then?

- Where it can be operated efficiently
- Green, stable energy supply
- Natural free-cooling
- Clarity on operating costs
- Secure
- Room to grow

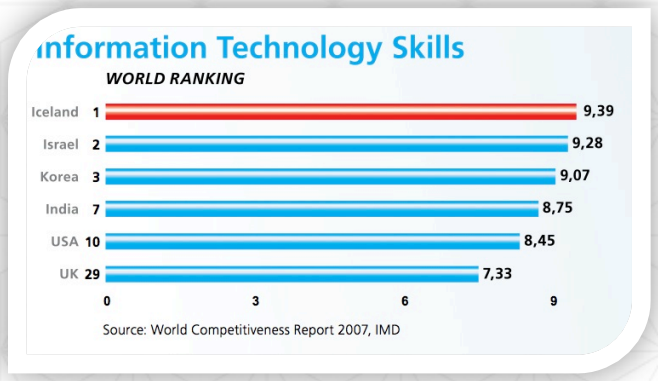


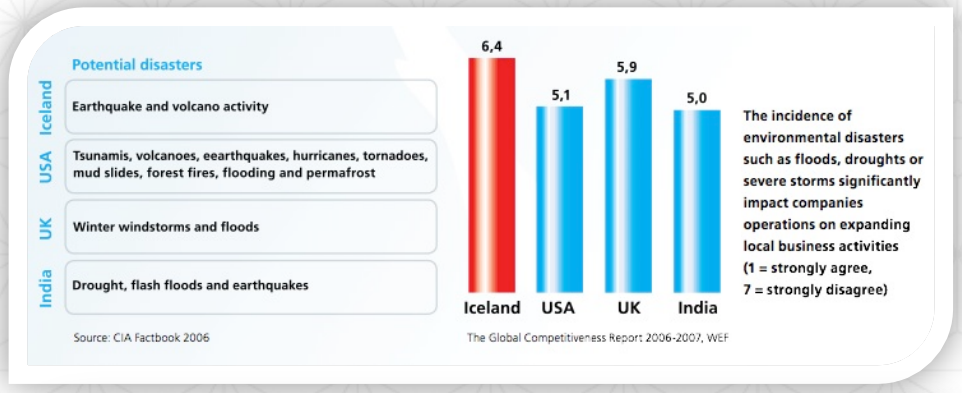


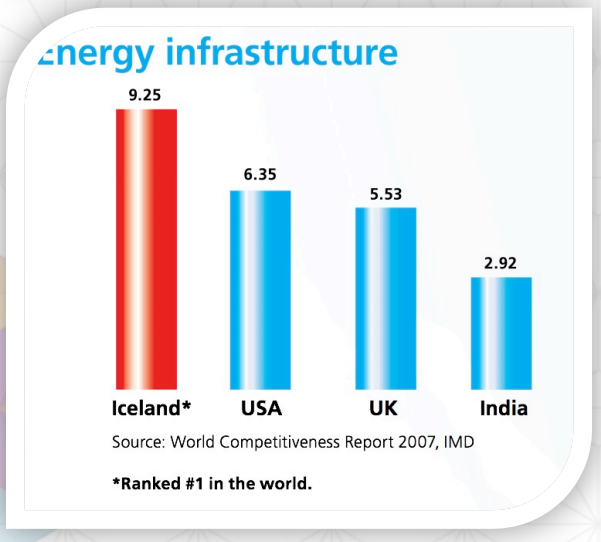
The case for Iceland

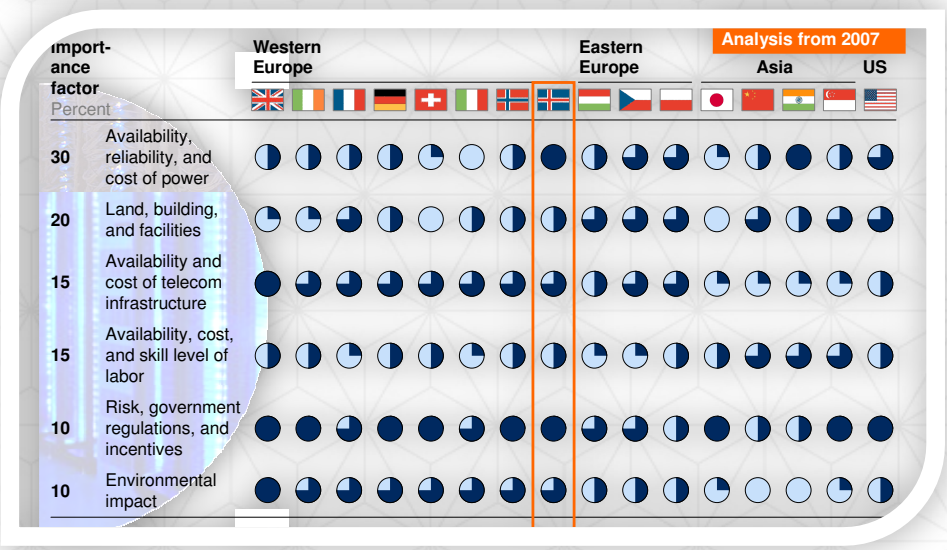
- Free Cooling
- Energy
  - Available
  - Low cost
  - Low power price inflation
  - Emissions
- Infrastructure
- Stability
  - Political
  - Geological

Iceland Compared







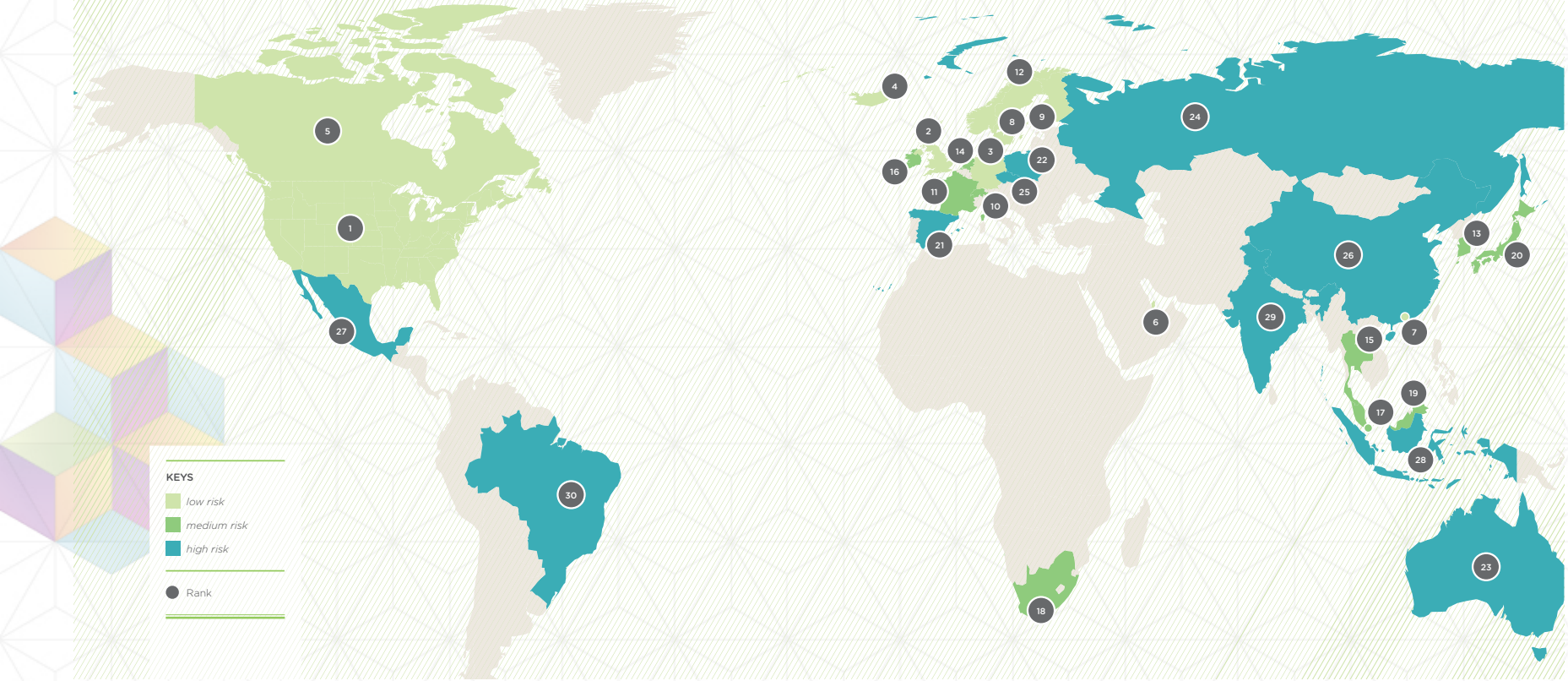


Cushman & Wakefield report 2012

DATA CENTRE RISK MAP

THE COUNTRIES. hurleypalmerflatt and Cushman & Wakefield have selected thirty countries for the Data Centre Risk Index, representing established data centre locations, emerging markets and a mix of key regional centres.

The Index is based on a flexible risk assessment methodology and it can be applied to any country in the world.



Cushman & Wakefield, continued...

CZECH REPUBLIC (Ranked 25th)

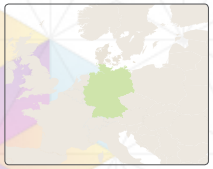
The country is politically stable, has low levels of taxation and is at little risk of natural disasters. However in terms of the three tier 1 risk factors - power pricing, international bandwidth and ease of doing business, the Czech Republic scores less well, resulting in a low table position.

FINLAND (Ranked 9th)

Finland performs well, it is at lowest risk of natural disasters and considered politically stable. However it does have the lowest score for energy security given its high reliance on energy imports from Russia. Labour costs are high and bandwidth capacity like Norway is relatively low.

FRANCE (Ranked 11th)

Although an established data centre location with high connectivity France ranks outside of the top ten because of its low score for ease of doing business, high taxation and labour costs and high levels of industrial action and political instability.

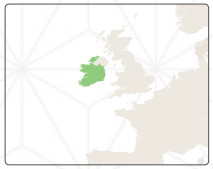


GERMANY (Ranked 3rd)

A major world economy and a major data centre hub. Taxation and labour costs are high but the third place ranking stems from its high internet bandwidth capacity, low rate of inflation and a stable political system. However its ease of doing business ranking has fallen in the last 12 months according to the World Bank.

ICELAND (Ranked 4th)

The highest ranked Nordic country receives the highest scores for sustainability and water availability. Natural disasters, political instability and a lack of bandwidth capacity are the only high risk factors. Connectivity should be greatly improved when the new 100 Gbps undersea cable connecting the US, Canada, UK and Iceland is completed.



IRELAND (Ranked 16th)

Home to a number of data centres and benefiting from low corporation tax, ease of doing business, high GDP per capita and high levels of education. Cost of labour and energy is relatively high and connectivity capacity is low compared to the rest of the table. Additionally Ireland falls into the bottom half of the table for energy security and sustainability.

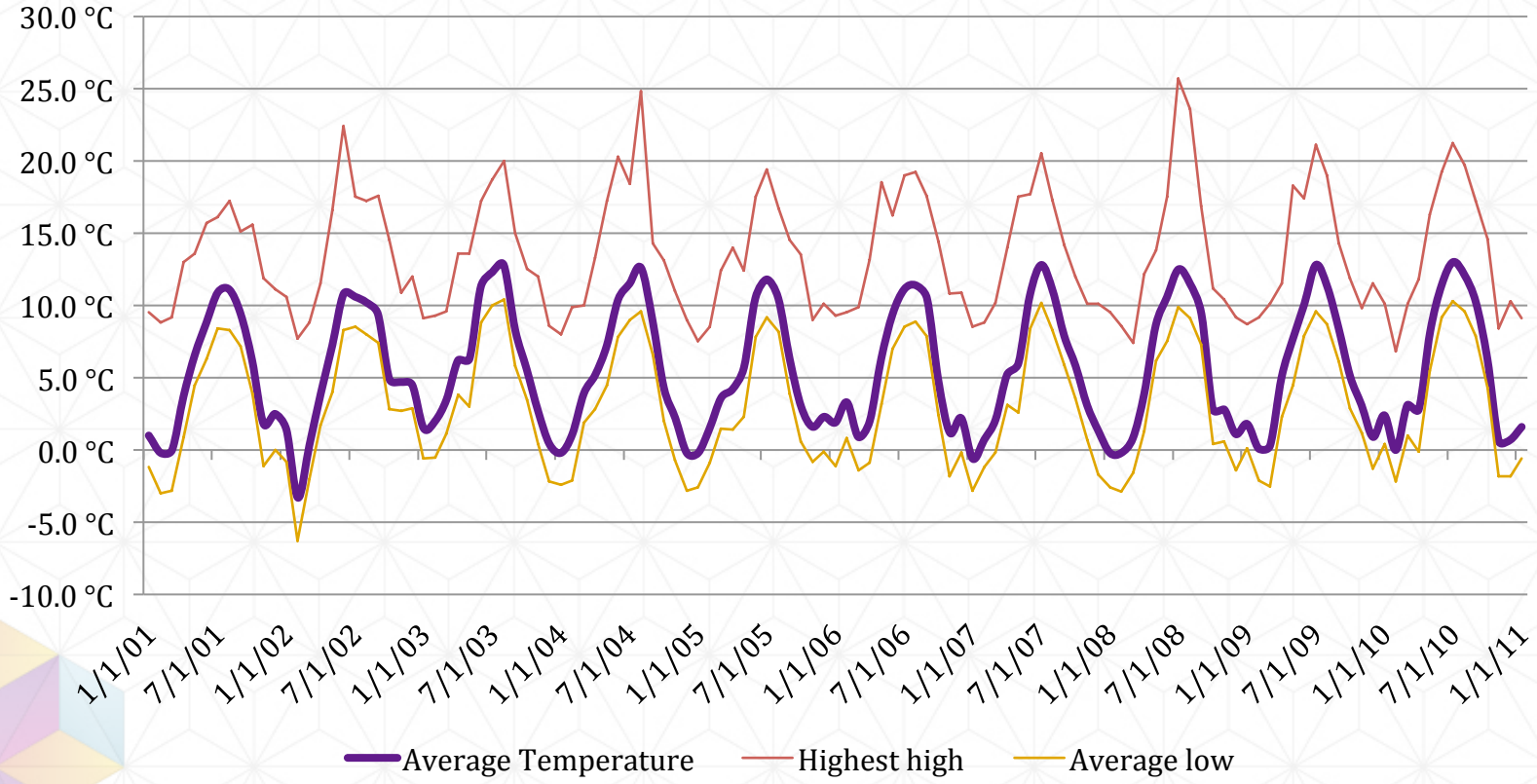
NETHERLANDS (Ranked 14th)

Considered the connectivity gateway to mainland Europe. It is low risk from a natural disaster point of view and is politically stable but appears low in the ranking due to high labour costs and has a low ease of doing business score relative to the countries in the Index.

NORWAY (Ranked 12th)

Considered to be the most politically stable of all the countries reviewed, Norway has high availability of natural resources and high amount of energy produced from renewable sources. Its mid table placing is a result of having the highest cost of labour in the Index and relatively low connectivity.

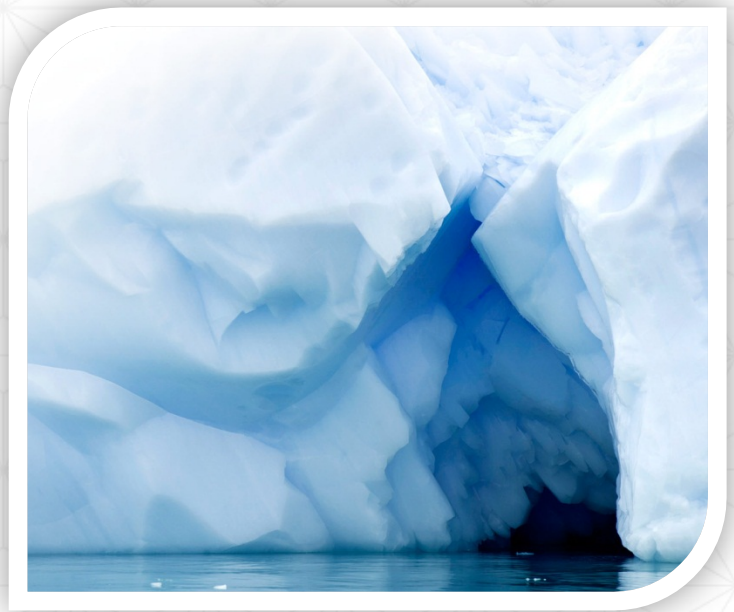
Free Cooling



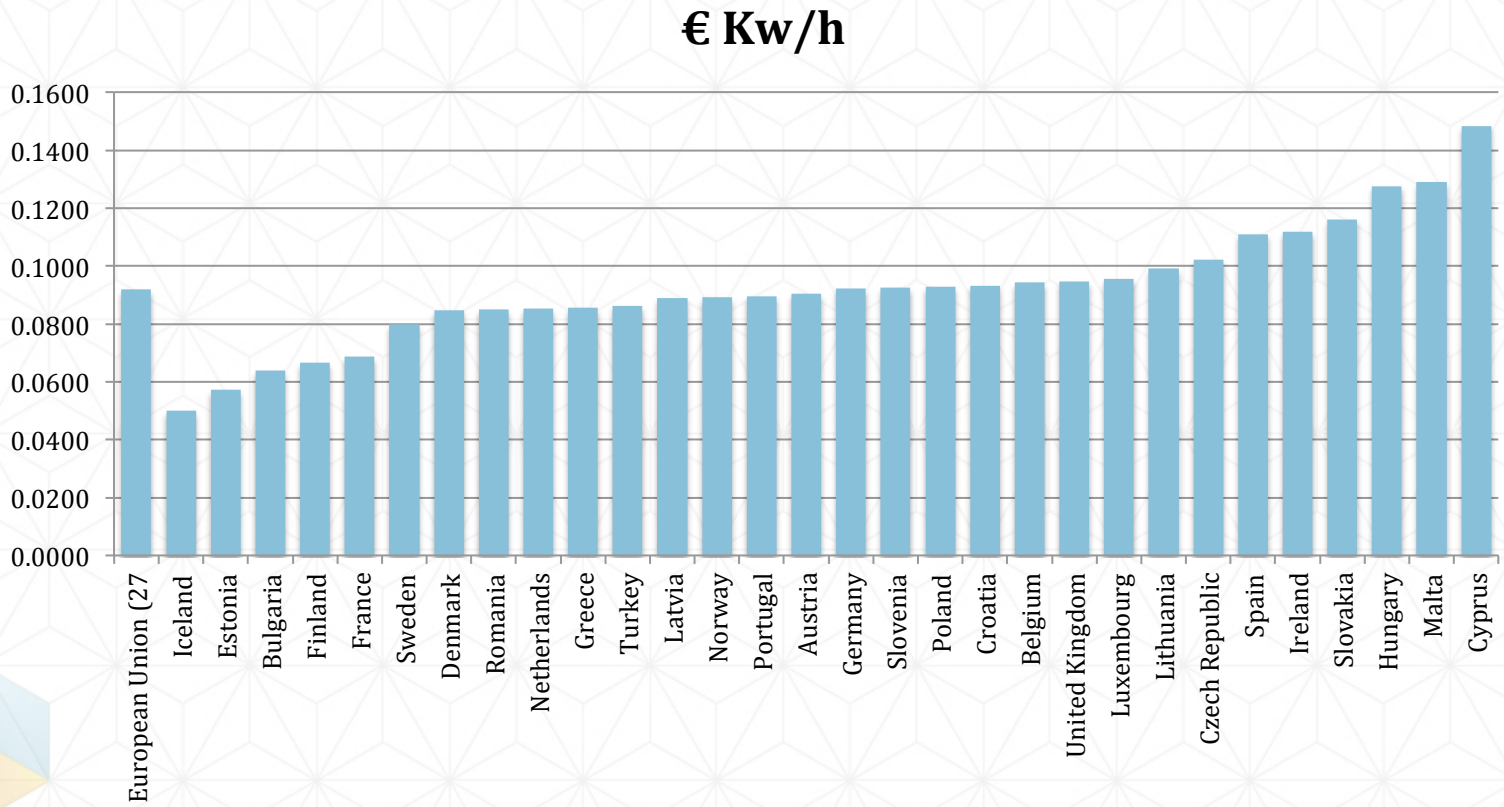
- Reykjavik Average temperatures last 10 years: Iceland Met Office

Energy

- Goals of the Power Production (LV):
  - Capture 1% of European DC business
  - Make Iceland one of the 10 largest concentrations of DC's in Europe within the next 10 years.
- Modern and robust powergrid
  - Grids in US and Europe are ageing and need upgrading
- Power-price inflation
  - in the USA, UK others in Europe - at ~%20 per annum.



Energy prices compared



Global, European Trends

- Europe accounts for 1/3 of the global DC market
- Market growing rapidly
- Power is…
  - getting more expensive
  - less available
- More outsourcing…
  - Cloud services
  - Virtualisation
  - HPC

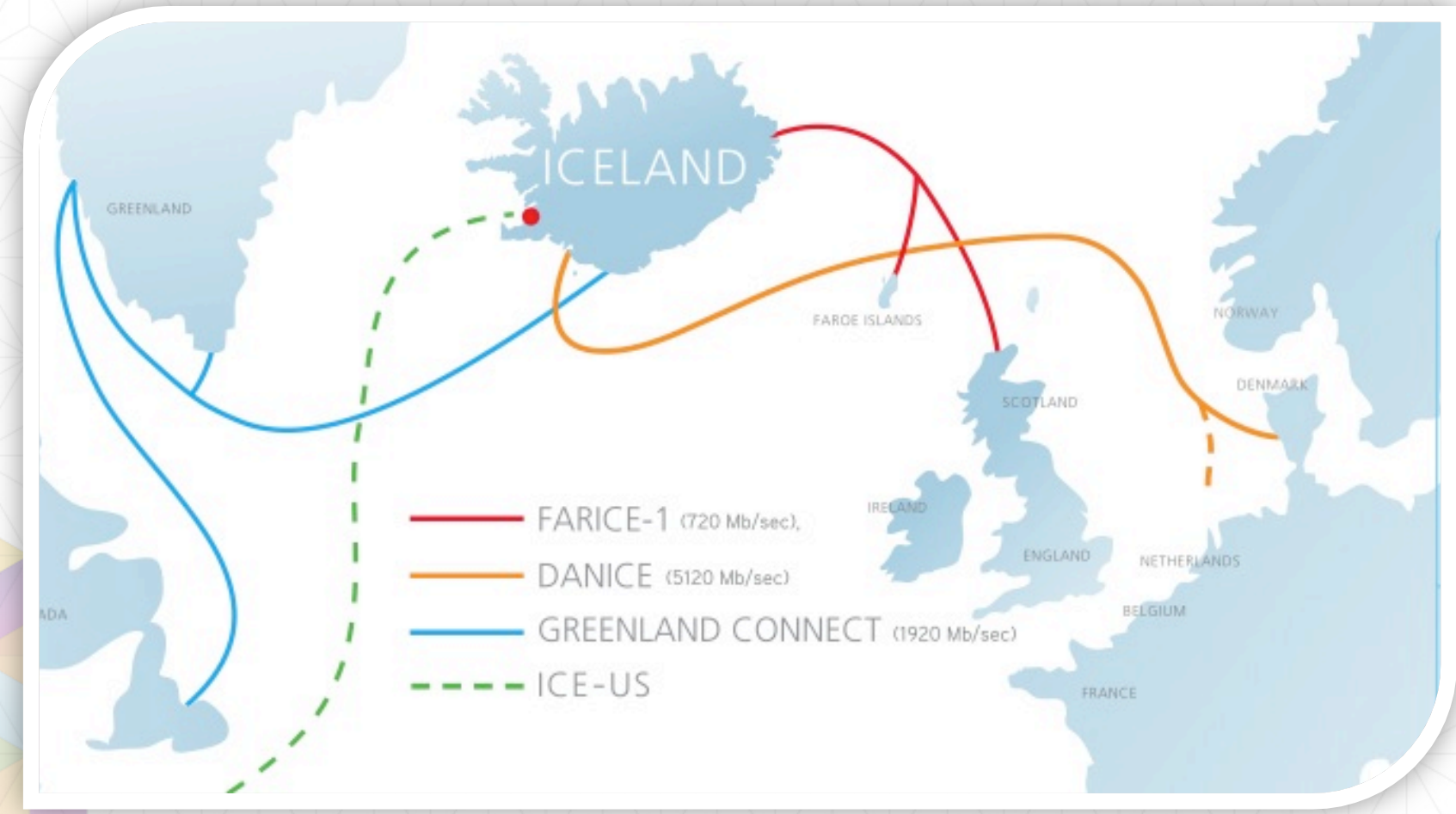
Key characteristics

- Non cyclical
- Steady and continued growth
- Healthy market[1]
- Sub segments with higher growth rates
- Western Europe represents 28% of the market

Trends that drive growth

- IT Outsourcing (especially of SMBs)
- Virtualization
- Rapidly increasing internet traffic

Iceland Connected




Advania Thor Data Center

Aquisition of Thor DC

- Given the facts…
  - Advania group positioning
  - Existing business
  - Trends in market
- First“real” datacenter in Iceland
  - Shorten time to market
  - Acelerate work on
    - Business environment, legal
    - Infrastructure, Power, FarIce

What is Thor DC?

- "Famous" Data Center
  - 352.000 search results on Google!
- Uses natural free cooling
  - PUE 1.16
- Tier 3
  - Dual power equipment
  - On site NOC, 24/7/365
- ISO 27001 certified
- 284 Racks capacity by utilization of existing facilities
- Room to grow
  - Current facility can double in size
  - Secured power for full facility for future needs.
  - Advania is ready with land, power and plans for another 20.000 m2 DC

Advania Thor Data Center

- **Aquired by Advania in late 2011**
  - A solid investment that complements other Advania solutions and services
  - Powered by 100% green energy -- with no CO2 footprint
  - Services for archiving, backup, colocation and cloud services
  - 24/7 network operation center
- **Opera Software is the biggest client to date**
  - 40 million customers
  - Internet traffic generated by Opera in the Data Center is equal to all other Internet traffic in Iceland
- **Dozens of other customers**
  - Valitor (VISA Iceland), Greencloud, John Deere,Veera Vilmi, DR Technologies, Transputech, Omnis, Atlantic Vision, Sensical Services, Caoz, Skakkiturn (Apple in Iceland) etc.
- **Plans are under way to move other Advania customers in Iceland into the Advania Thor Data Center**
  - Advania has over 10,000 clients worldwide

Focus on Higher Education

- **Advania is working on pioneering E2E concepts with parters such as HRC3 and NHPC.**
  - Green Co-Location at highly competitive long-term rates.
  - Backup
  - Storage
  - Cloud
  - VDE, VLE, other Virtualisation of software platforms, VM's.
- **Higher Education and HPC clusters**
  - NHPC supported from the get-go.
  - Other HPC inquirees from Europe, UK.
- **Metrics**
  - Advania is working with HRC3 and others to get metrics better defined, so that Educational Institutes can compare apples to apples when comparing the cost of various hosting options.
  - OJEU status – ability for institutions to buy services without having to do an RFP/Public tender first.


Thank you!
CONTACT: kolbeinn@advania.is