

**tnc18** Trondheim, Norway  
10-14 June 2018  
*Intelligent networks, cool edges?*



## Cloud reflections...

*Or How I Learned to Stop Worrying and Love the Cloud*

**Garvan McFeeley**

HEAnet  
12/06/2018

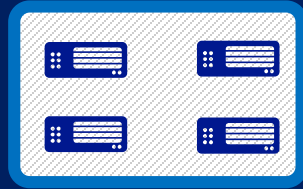
# QQI and Azure A Customer Perspective

Quality and Qualifications Ireland

- QQI - an amalgamation of 4 agencies
- Amalgamation occurred in Nov 2012
- A number of legacy technologies & services inherited

# Landscape in 2012

Teams in Multiple Locations



4 Exchange Servers



3 Key Business Systems  
Fionnan, Qualifax, FBS

Databases without Support

Dated Hardware

 SharePoint

2 SharePoint Farms



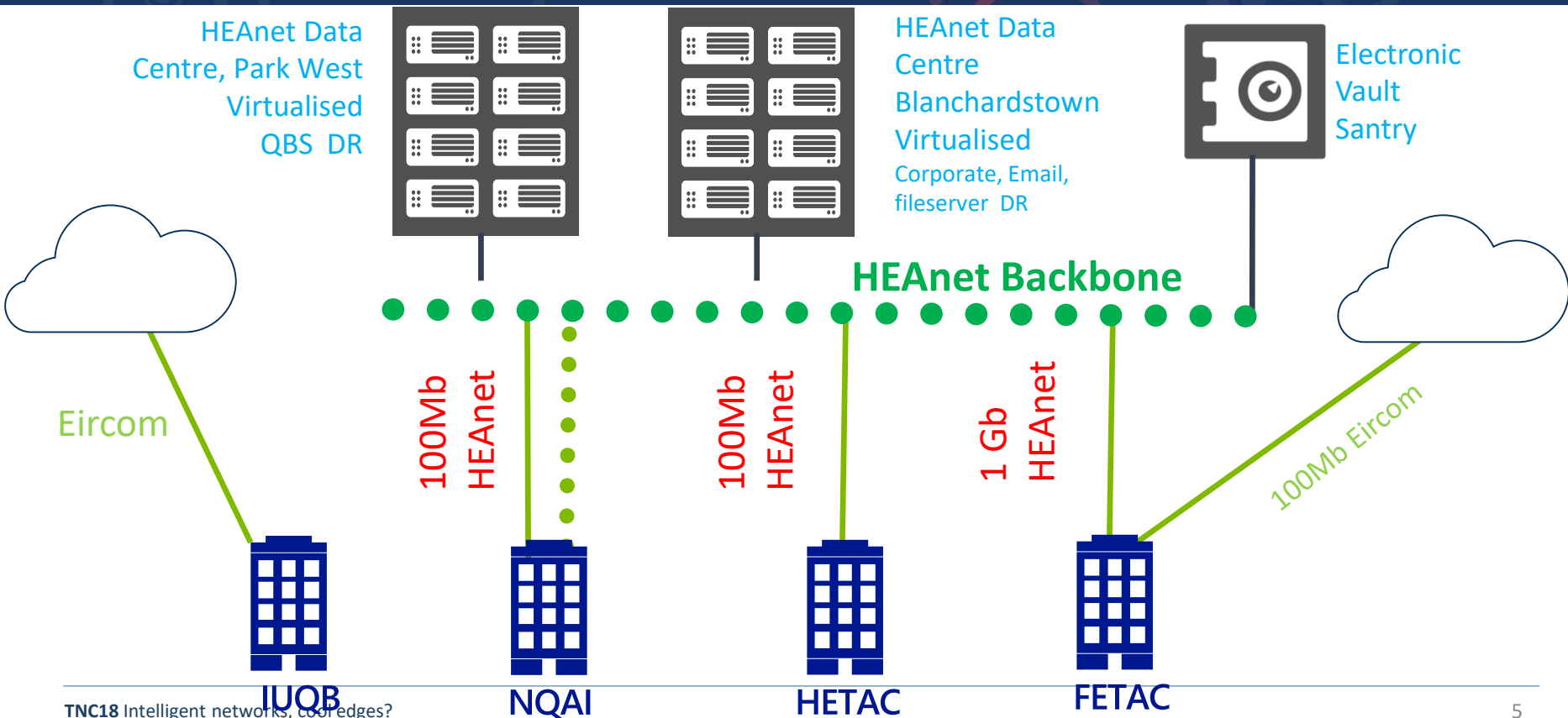
16 Websites

Complex Network

8 Hosting Vendors

# Landscape in 2012

## Complex Infrastructure



# Landscape in 2012

## Numerous technologies

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# High Level Strategy

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Simplified Infrastructure

Simplified support

Cloud first

Focus on new business and keep existing business services operating

## Consolidation



Virtualised

Reduce Domains

Single Mail Service

Reduce Vendors

Rationalise Network

Reduce Locations



Simplify



Security



One platform

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One Datacentre

One Team / Skillsets

One Network

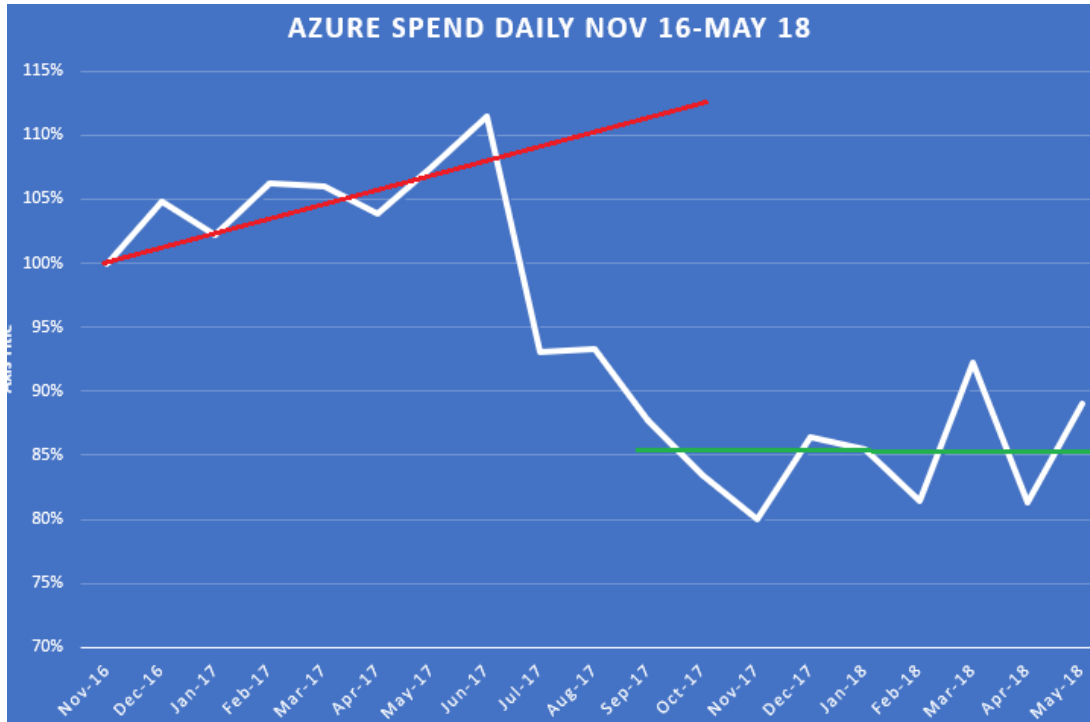
Application Security Improvements

Multifactor Authentication

# Milestones

- December 2012 – first pilot systems on Azure – Pay as you go
- June 2014 – Enterprise Agreement – Azure Monetary Commitment
- July 2017 – GÉANT framework
- May 2018 – **All** infrastructure in Azure

## Monthly Spend Nov 2016 – May 2018



## Benefits

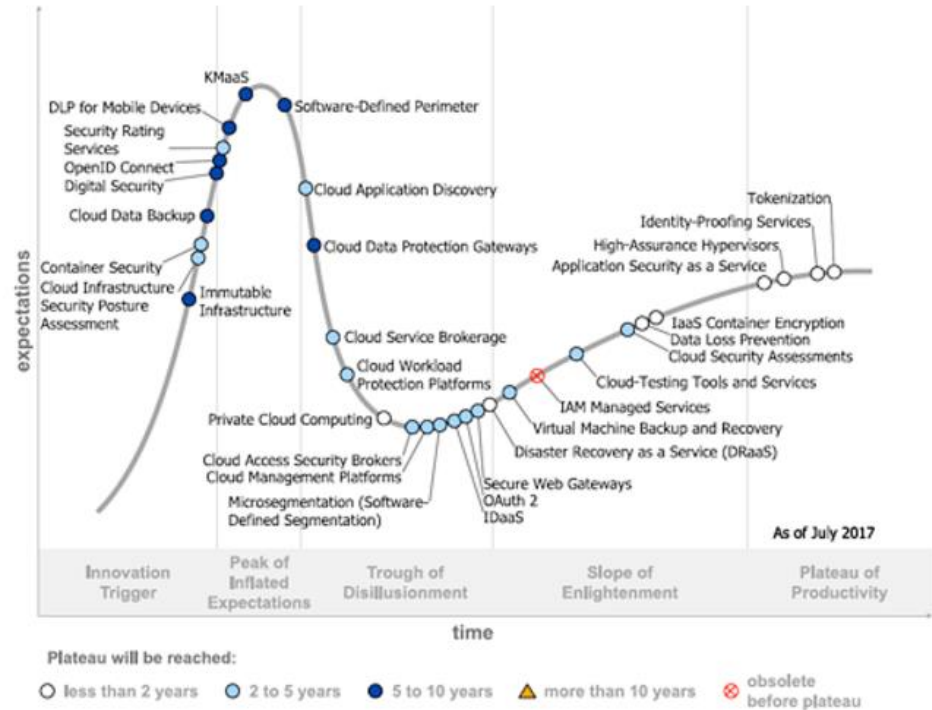
- GÉANT Framework
- Azure Hybrid Benefit - Campus
- Right sizing
- Azure automation tasks
- Monthly cost would be 33% higher

## Azure optimisation - ongoing

- Reserved instances for specific VMs
- Review of production and development subscriptions
- VMs – sizing / new options
- Storage costs – tiers

*Infrastructure including resilience and backups  
for little more than data centre costs*

Figure 1. Hype Cycle for Cloud Security, 2017



- Cloud is now mainstream
- Cloud adoption is not easy
- Cloud services require new skills
- New processes to manage are required
- Migration is complex
- End users have embraced the app culture
- One cloud does not fit all

- This looks expensive
- Is it really this complex to compare offerings?
- I can only spend Capex
- What can I buy?
- What can I not buy?
- This is not an exhaustive list!



- Do you know the true costs of onsite hosting?
- Who pays your electricity bill currently
  - Facilities?
  - You?
  - Someone else?
- Who pays support and maintenance on HVAC systems?
- Do you have a 'sinking fund' in your budget cycles?
- What is the value of sleeping easier in you bed

## FAQ - It's Complicated!

- Pricing is complex
- What you can consume is broad
- Expect that ANYTHING can be metered
- Discounts can be multifactorial
- Like for like comparison difficult
- This will make your head hurt on occasion
- Software licensing can be
  - Confusing
  - Complicated
  - A source of hair loss and/or hair colour

- There had to be a slide on GDPR!
- How is your trust level?
- Snowden
- Cambridge Analytics
- What is under the next rock?
- Cloud providers are taking this seriously

## Expected benefits from Cloud

- Price drops over time
- Economies of scale
- Service evolution
- AI/ML
- Time to provision

## Unexpected benefits from Cloud

- DDOS
- Threat detection and management
- Performance improvements
- Sleep easier at night
- Time to conclude data analysis for researchers
- Time to procure

- Cloud is an odyssey – not just a journey
- The IT Operations process is evolving
- Offload the drudgery
- New skills required
- Rate of change is scary
- Some really interesting unexpected benefits
- The future is bright!

# Microsoft & Géant – A shared Vision

Bradley Tipp  
Research Solutions Director  
Microsoft Education



A photograph of a young woman in a black graduation cap and gown hugging another young woman from behind. The graduate is smiling and holding a rolled-up diploma tied with a red ribbon. The friend is wearing a red and white patterned dress. The background is a blurred outdoor setting with greenery and a building.

A bold mission at an important moment

**The Microsoft mission:**

To empower every person and every organization on the planet to achieve more





We are at an intersection

# Limitless research

Infinite capacity

Collaboration

New approaches





Mixed  
Reality



Elevation  
25,643'

Temperature  
-22°C

Artificial  
Intelligence



Quantum  
Computing

# Microsoft's commitment to you...

We are GDPR-compliant across our cloud services.

We will share our experience in complying with complex regulations such as the GDPR.



## Constructive Conversations

# A Digital Geneva Convention

### Challenge

There is not only a growth in cybercrime, but a proliferation in nation-state-sponsored attacks that are harming critical economic and social infrastructure and our institution of democracy.

### Technology Solution

A Digital Geneva Convention would commit governments to not targeting civilian and civilian infrastructure, ensure that technology companies are playing 100 percent defence and 0 percent offense, and establish a independent attribution organization to determine the nature of future attacks.

### Outcome

The recent WannaCry cyberattack demonstrates that critical services from small businesses, energy providers and financial institutions to hospitals are now subject to cyberattacks and the billions of dollars borne by the community.



The Fourth Geneva Convention has long protected civilians in times of war. We now need a Digital Geneva Convention that will **commit governments to protecting civilians from nation-state attacks in times of peace.**

For more information, please see [Brad Smith Speech at the Geneva Lecture Series](#).



# Microsoft AI Principles

Fair | Accountable | Transparent | Ethical

- 1 AI must maximize efficiencies without destroying the dignity of people
- 2 AI must guard against bias
- 3 AI needs accountability so humans can undo unintended harm
- 4 AI must be transparent
- 5 AI must be designed for intelligent privacy
- 6 AI must be designed to assist humanity

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**Thank you  
Any Questions?**

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**GÉANT**



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