



Dienst Uitvoering Onderwijs  
Ministerie van Onderwijs, Cultuur en  
Wetenschap

ODC-Noord

*Increasingly cloudy*

*Epco Wijngaarden Product-owner IaaS*



## Quote "Tallinn the Silicon valley of Europe"



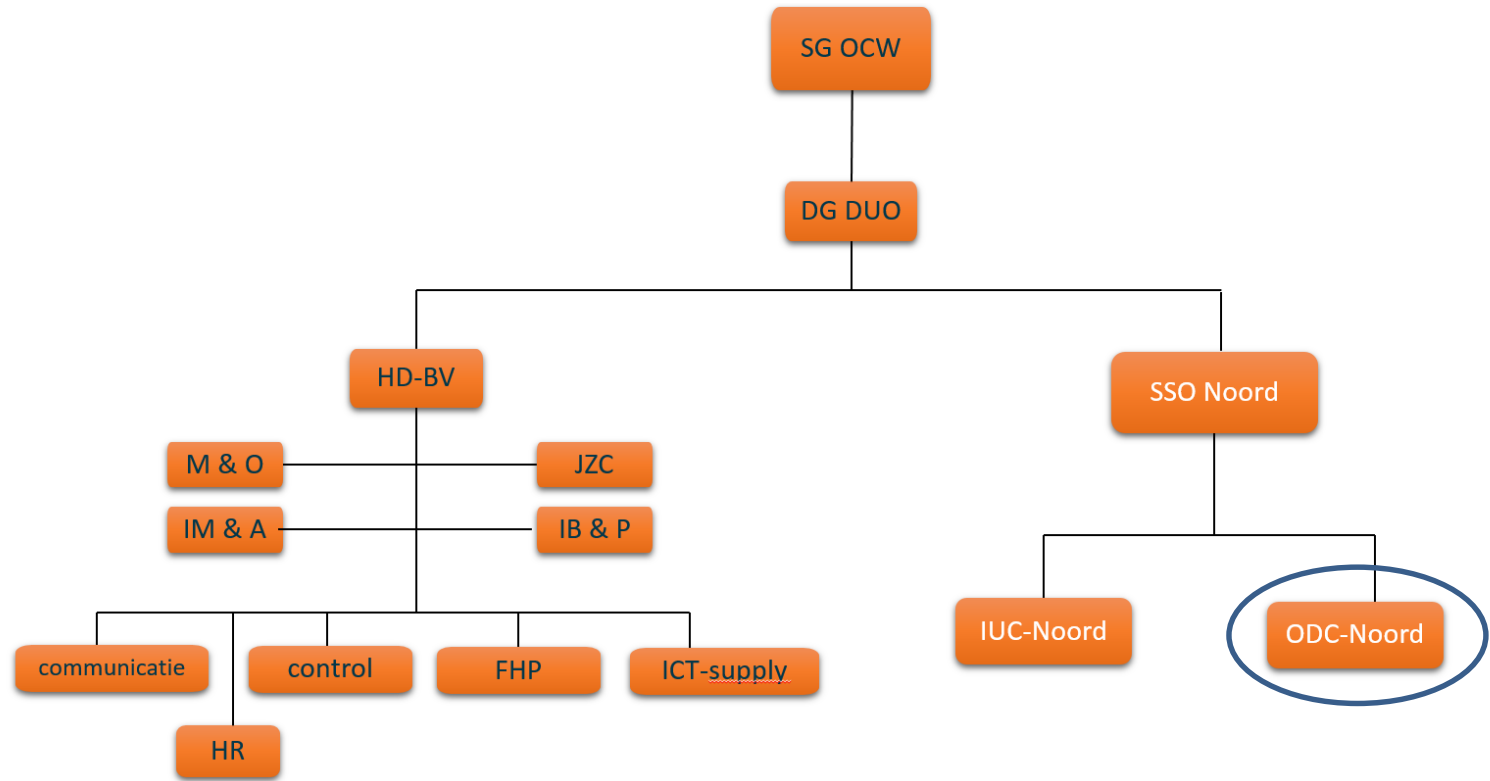


## Agenda

- Introduction
- History
- To day
- On boarding customers
- Future: roadmap
- Lesson learned.

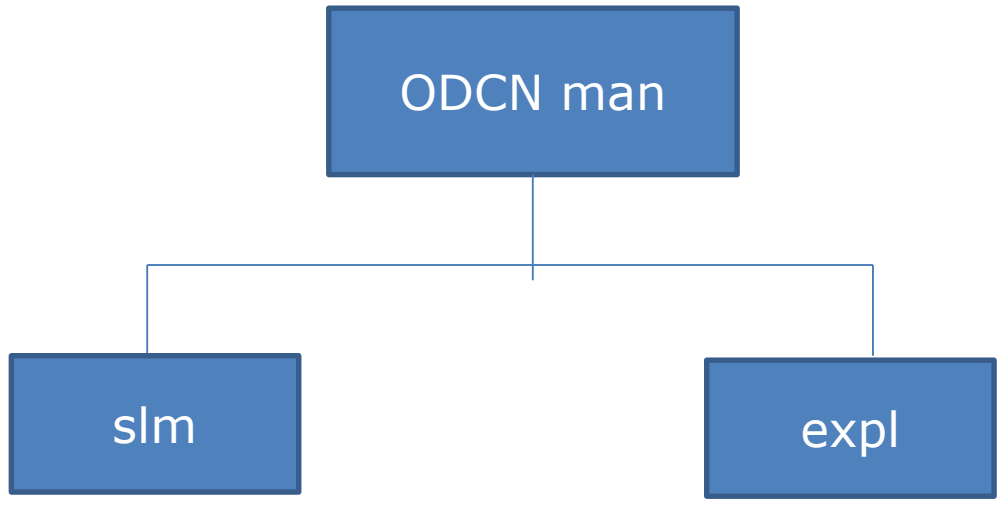


## ODC Department of ministry of Education and Culture





## ODCN



- PO Haas IaaS
- PO Paas/SaaS
- PO Containerplatform
- PO Windows



## Locations

ODCN one of four ODC's



RON 2.0

**Target: From 100 to 4!**

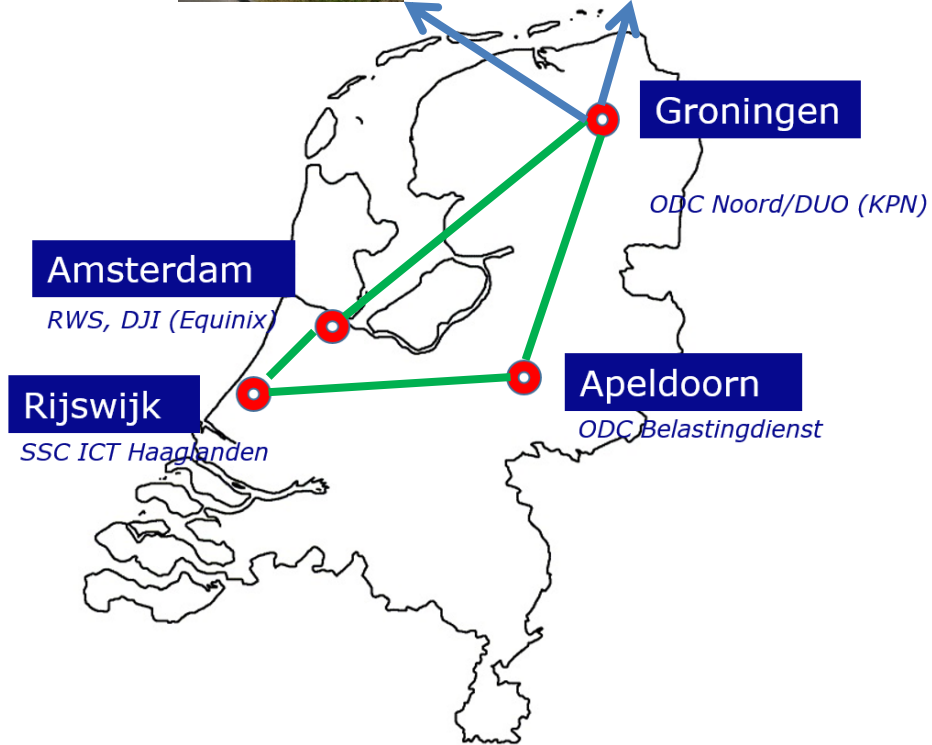


# ODC-Noord Housing & Hosting

Locations  
 groningen  
 Both tier 3



RON 2.0



**Security**

**Availability**

**Durability**

**Flexibility**



2013, 2014, 2015, 2016, 2017, **2018**, 2019, 2020 2020

2013

- Completion first phase Datacenter.

2014

- Start of housing-services for several customers;
- Selected OpenStack / Ceph for OCW as cloud platform.

2015

- OpenStack / Ceph goes live for production purposes,
- Migration OCW Business-Applications form Atos to ODC-Noord cloud;
- Facet-digital(practice-part) examination starts hosting on ODC-Noord cloud

2016

- Migrated workload from Amazon to ODC-Noord lenM
- Economic Affairs selects ODC-Noord for case management
- S3 storage

2017

- Department of Justice selects ODCN as provider.
- Development of PaaS and Container platform

2017

- Migrating workload from Atos to ODCN for Department of Justice



Na slechts 5 maanden en 11 dagen bouwen: een werkend datacenter!





## Result after 5 years

- Team = 50 employees
- 37 engineers
- OpenStack
  - › Multisite (2 sites)
  - › 53 compute nodes
- Ceph
  - › 12PB (2PB SSD and 10PB SATA distributed over 2 sites)
- Well over 3.000 VM's
- A variety of PaaS services(all open source)
- Some SaaS services (all closed source)
- Container platform



## ODC-Noord vision

- Servicing several Government departments
  - Housing
  - Hosting
  - Consultancy
    - Migration
    - Development PaaS services
- Cloud service-provider like Amazon but:
  - Datacentre located in Holland, connected to other DC's.
  - Delivering cloud solutions via the other ODC's, transferring management is a option



## Main customers for hosting (Open stack)

### Departments

- Education
- Justice
- Infrastructure
- Home affairs.

A mix of enterprise and cloudy workload.

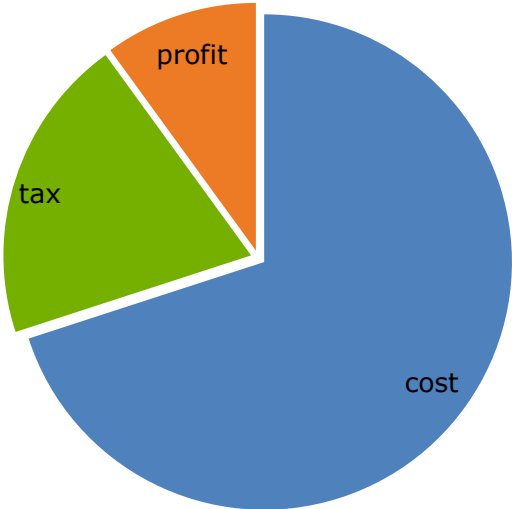
## Main customers for housing

### 7 departments

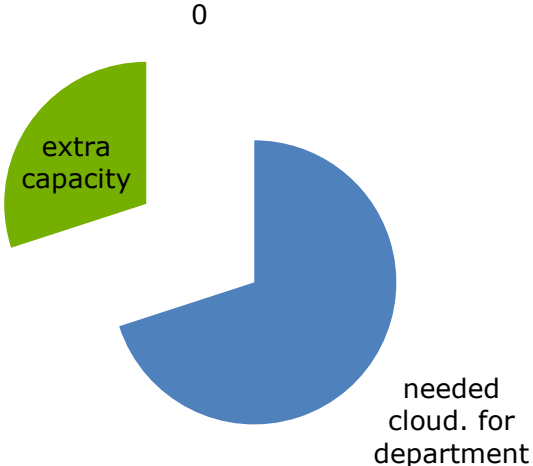
- They had to rent a number of required rack-space before building the datacentra



# Department of Education: launching customer



- 1
- 2
- 3



- 1
- 2
- 3

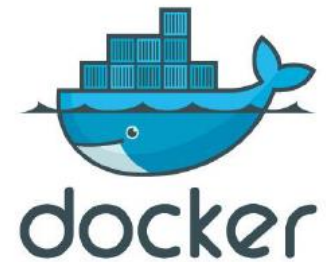
Payment to Atos by department

The cloud we builded for that money

First year: payment to ODCn equal to ATOS



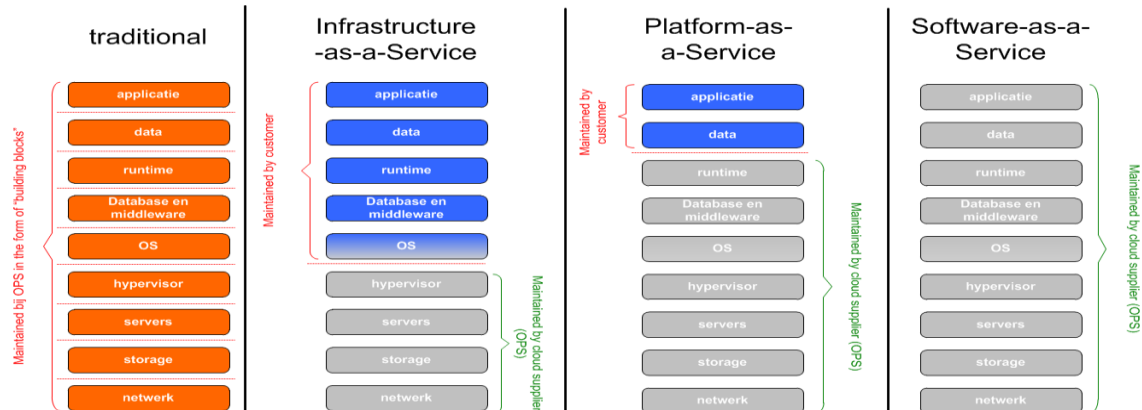
- O On boarding example:
- n
- e - Customers starts with housing (hire racks)
- S
- t
- o - After 4 year customer wants to use the
- p cloud.
- S
- h
- o - years after: Customers redesigns
- p application landscape to cloud ready





## Benefits for customer

- no public tenders needed
- avoid migration of workloads every 4 to 6 year
- pay per use
- use of hybrid cloud possible
- focus on business in stead of ICT





## What we offer (1)

- Housing
- IaaS.
- S3
- PaaS (Gitlab/haproxies/ELK/rabbitMQ/NTP/Mailservers/Postgres)
- SaaS (Topdesk, Confluence, Jira)
- Containerplatform



## What we offer (2)

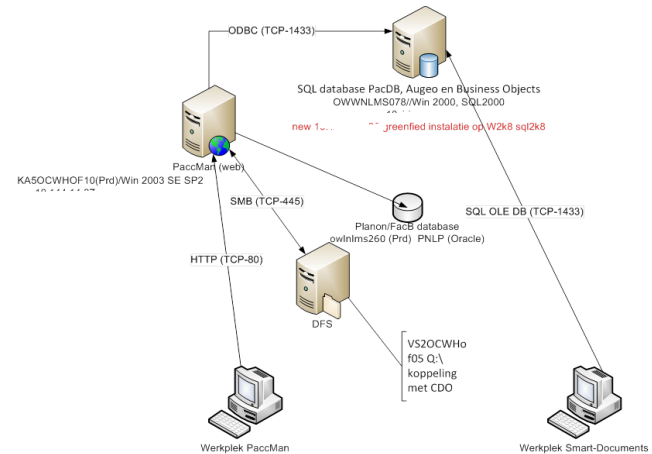
- competitive Service-levels
- self service portal
- 24/7 support
- one stop voor private, public cloud
- specials (cloud connected to enterprises f.e. Nutanix)
- small teams, agile way of working
- much experience in migrating workloads.
- tooling for migration.





## Our approach / migration strategy

- overall landschap
- establish connectivity
- investigate applications (spider-web)
- make detailed run-book
- use migration tooling.



CITRIX®  
XenServer



vmware®

Migration  
tool





## Roadmap

- pay per use on a daily basis
- volume grow, decreasing price
- backup as a service
- DNS as a service
- shared storage in the cloud
- next level container platform
- geo loadbalancing, peering amx Amsterdam





## Lessons learned

- To get started, you need a start-up approach.
- Running a cloud is complex. Staff has to be high skilled.
- Fully automated deploy and upgrade is not easy, but necessary.
- Migration of workload needs cooperation of cloud provider and customer. (Set-up of a joint project-team is necessary).
- Critical mass, anchor customer or sponsoring is needed to start. (Can also be a joined effort of several departments).

