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## **Cloud Security**

**Lessons learned from 6 feet under**

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**sitrONICS**  
telecom solutions ■



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## An Introduction

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## Datacenter Solutions

**Facilities  
Management**

**Converged  
Networking**

**Consolidation &  
Optimisation**

**Security &  
Compliance**

### Cloud Builder

- ▶ Cloud Planning & Design
- ▶ Cloud Implementation
- ▶ Operations organisation consulting

### Innovative Solutions

- ▶ Backup aaS
- ▶ Storage aaS
- ▶ Desktop aaS
- ▶ Security aaS

### Cloud Security

- ▶ Strategy
- ▶ Engineering Services
- ▶ Solution Integration
- ▶ Audit & Validation

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## Public Cloud

*The first  
Greek public  
cloud from a  
Telco  
provider*

## Target Market

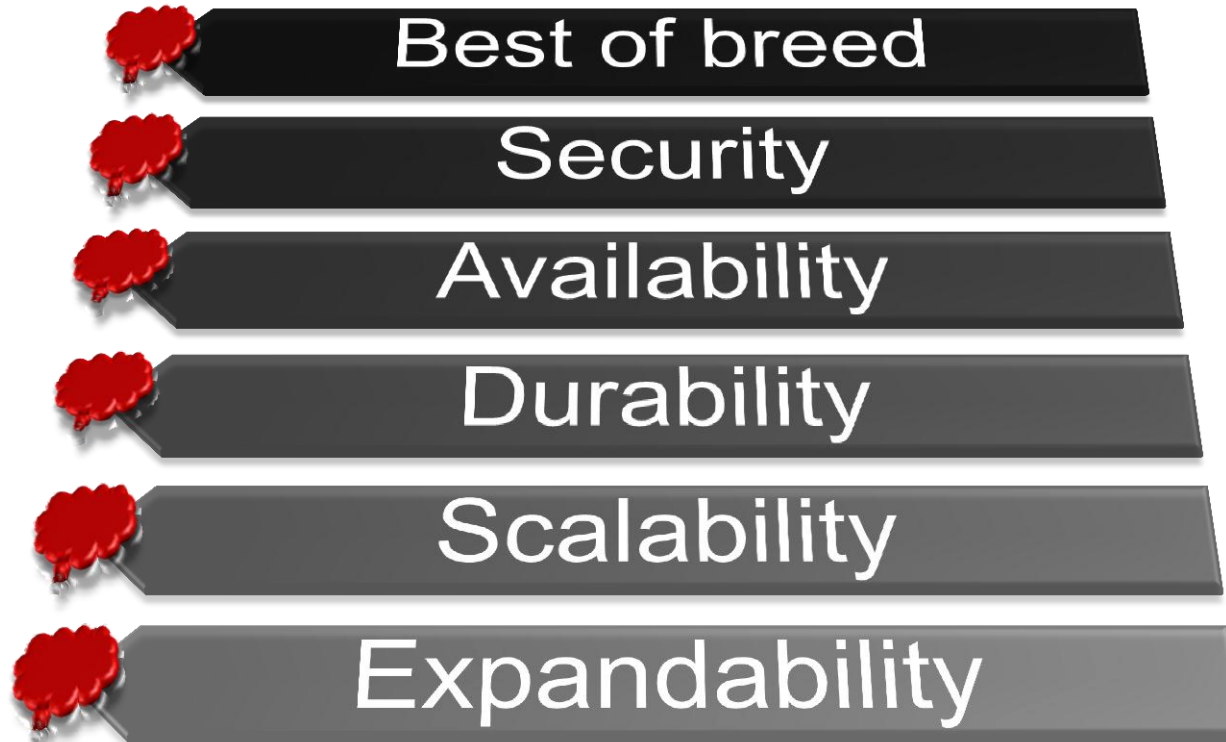
Enterprises  
and SMB

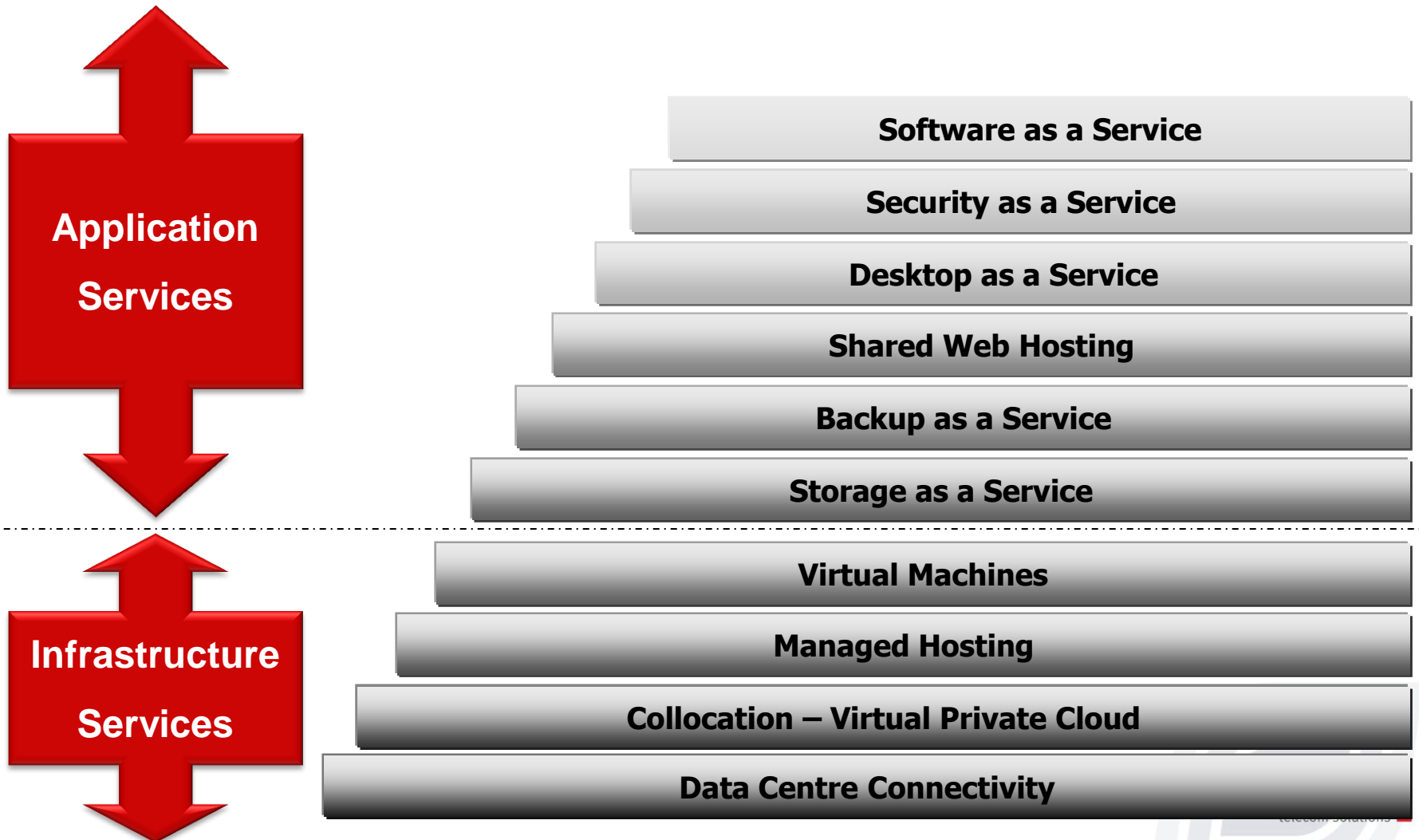
## Key Requirements

Top-notch  
Security

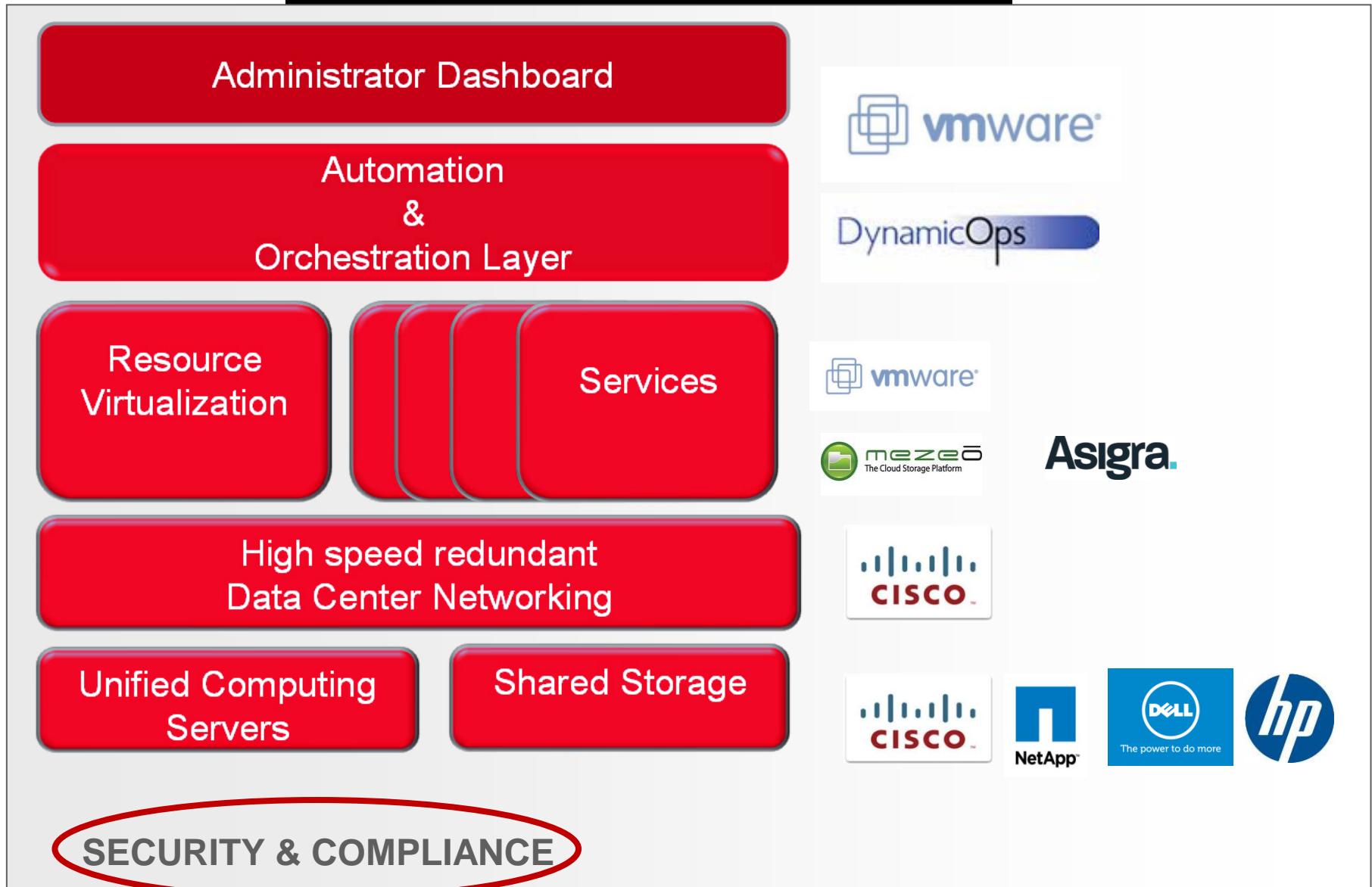
Innovative  
Services

Strict SLA





# The result: a secured & compliant infrastructure





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## Lessons Learned

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## Lesson 1: It is (very) difficult



# TECHNICAL DIFFICULTIES

can even surpass the mighty power of the dark side

[motifake.com](http://motifake.com)

# What we did; an overview

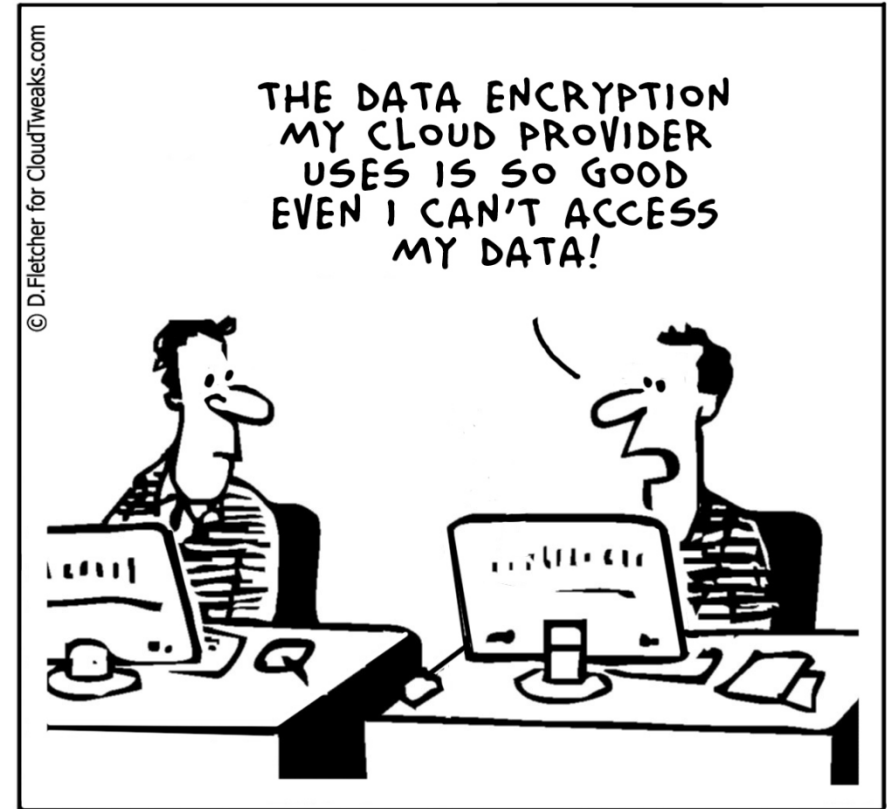
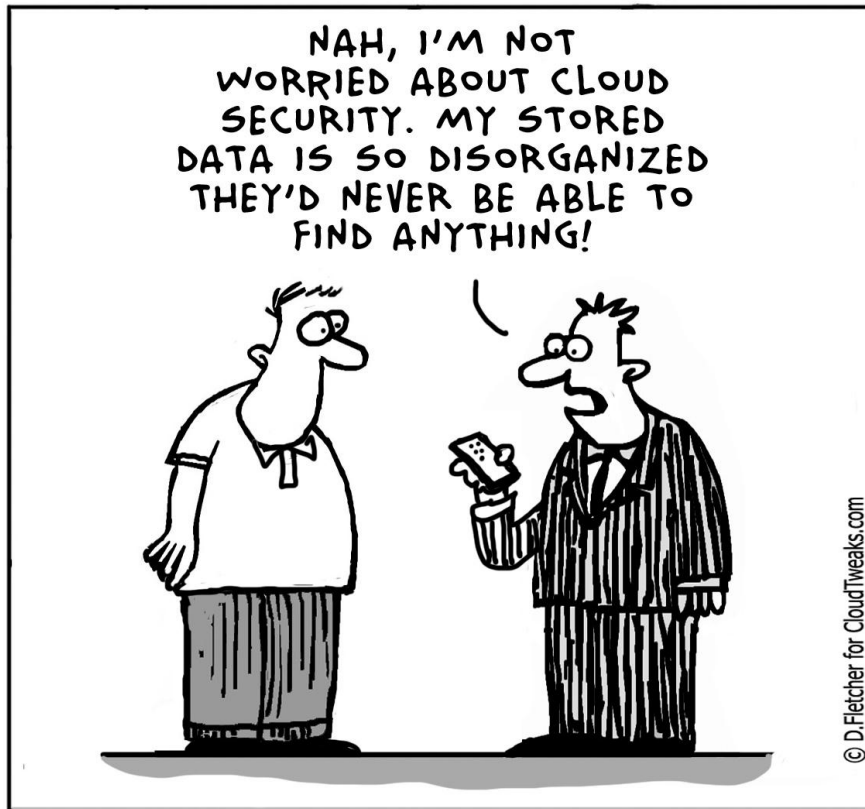
- ▶ Security by design
- ▶ Best of breed solutions
- ▶ Compliance to regulatory requirements
- ▶ Internationally accepted standards for information security
- ▶ 24x7x365 operations
- ▶ New service lifecycle
- ▶ Roadmaps to expand business

## Lesson 2: eh, security?



# Not a straightforward story

- ▶ Cloud Information Security Framework
- ▶ Dedicated information security organization
- ▶ Security by design
- ▶ Security implemented at all levels
  - Physical level
  - Network level
  - System level
  - Application level
  - User management level
  - Data level
- ▶ Solutions applied have been based on comprehensive Risk Assessments



## Lesson 3: Compliance, can it really be?



- ▶ We started of by considering
  - Cloud Security Alliance (CSA)
  - ENISA (European Network and Information Security Agency)
  
- ▶ ADAE (Hellenic authority for communication security & privacy)
  - Security & privacy of subscriber information
  - Contractual requirement with HOL
  
- ▶ DPA (Data Protection Authority)
  - Data security & privacy of subscriber information
  - Applicability particularly for PACS
  - Laws 2472/97, 3674/08 – adaptations of EU Data Protection Directive 95/46/EC
  
- ▶ PCI DSS (Payment Card Industry Data Security Standard)

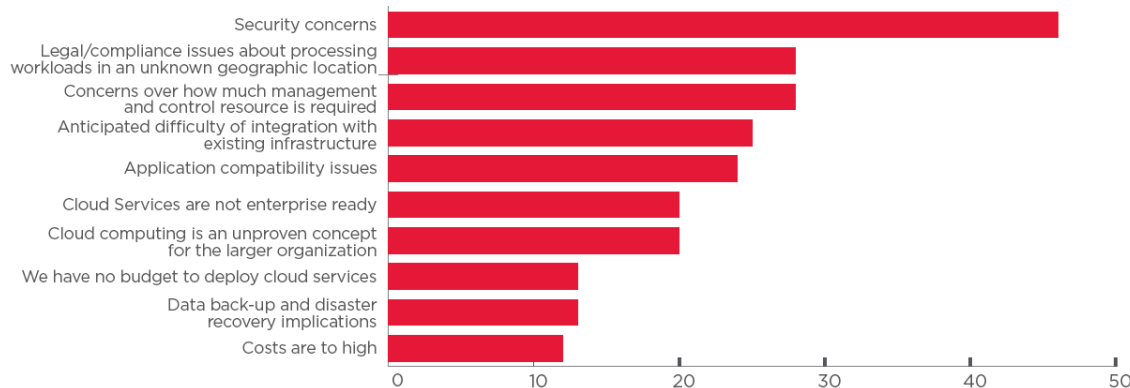


- ▶ Information Security is still the primary inhibitor of cloud adoption
- ▶ We needed a structured and process based approach to satisfy our business requirements
- ▶ We needed an internationally adopted standard to drive our efforts & ensure compliance

## We decided to certify our cloud, hosting & collocation services against ISO 27001

Figure 13:

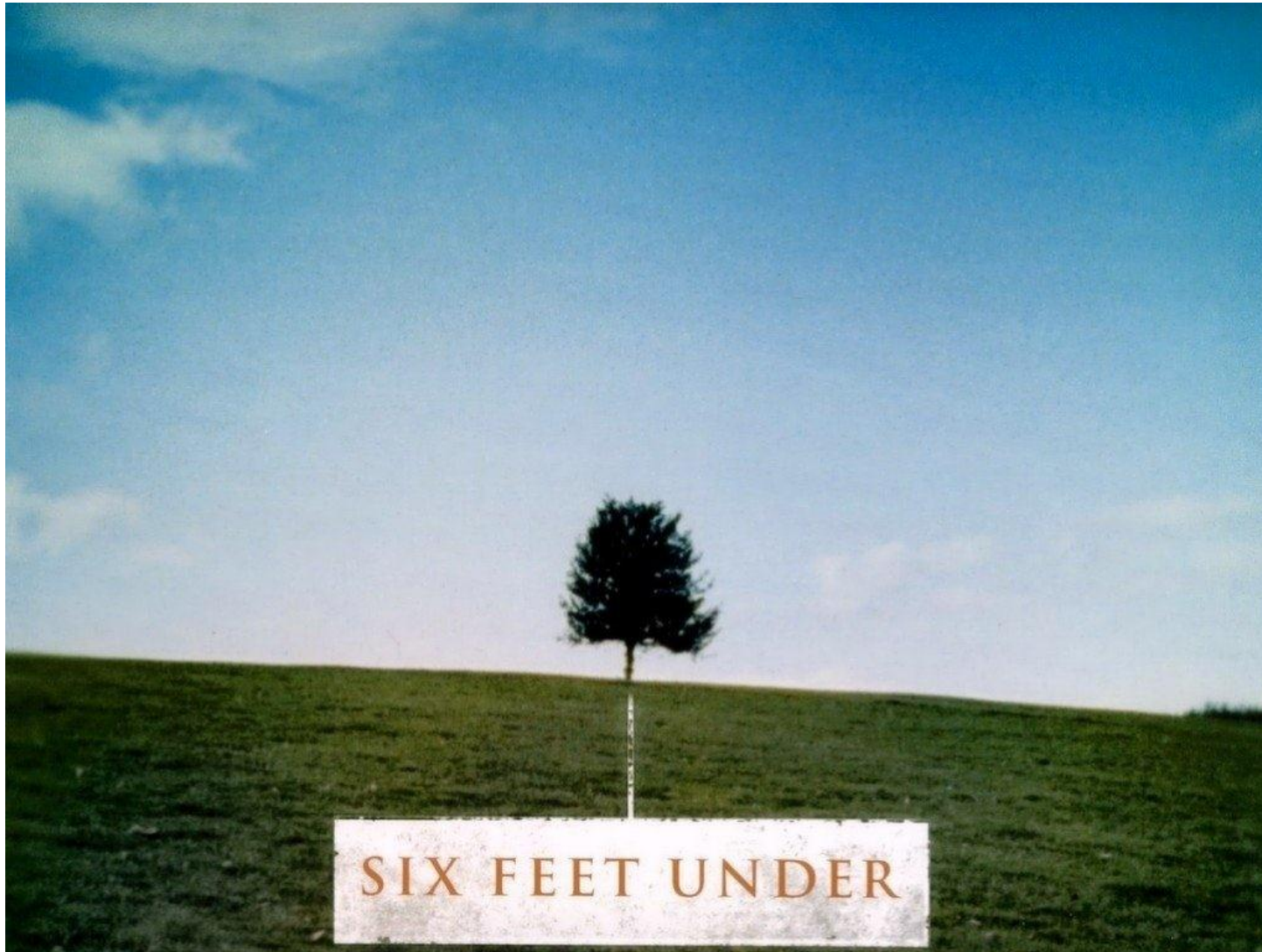
### Reasons why organizations are not using cloud computing



(\*) 2013 Global IT leadership report, Savvis



## Lesson 4: “Operations” is not just monitoring



# The operations' organization



- ▶ Well-established operations organization
- ▶ Dedicated operations team
- ▶ Cloud Services Operations Centre (CSOC)
- ▶ Network & Security Operations Centre – 24x7x365 active
- ▶ Close relation & cooperation with the Cloud engineering team
- ▶ Operations' services for corporate customers



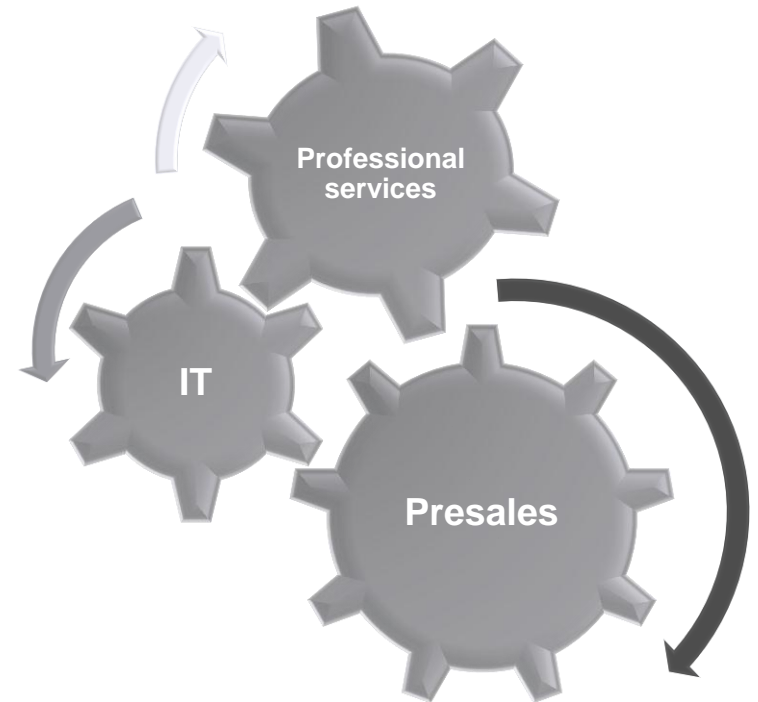
▶ Consulting assistance from Encode (ISO 27001 certified, ISO 27001 auditors & implementers)

▶ Dedicated Cloud Services organization

- Dedicated engineers
- Dedicated pre-sales engineers – architects
- Dedicated project managers

▶ Ongoing involvement

- New service deployment
- Cloud infrastructure optimization
- Improved security
- Improved operations



Did we manage to get everything in place?





# Ask the right questions to your provider

► Keep in mind

► How are you

► How do you

► How is security

► How do you

► What will be

► Establish v

► Compare

## AVERAGE FREQUENCY OF ATTACK

### Top Three Incident Classes

CLOUD  
HOSTING  
PROVIDER



Brute Force



Web App Attack



Malware/Botnet

ENTERPRISE  
DATA CENTER



Brute Force



Malware/Botnet



Web App Attack

## AVERAGE NUMBER OF UNIQUE ATTACK TYPES

### Threat Diversity



CLOUD HOSTING PROVIDER

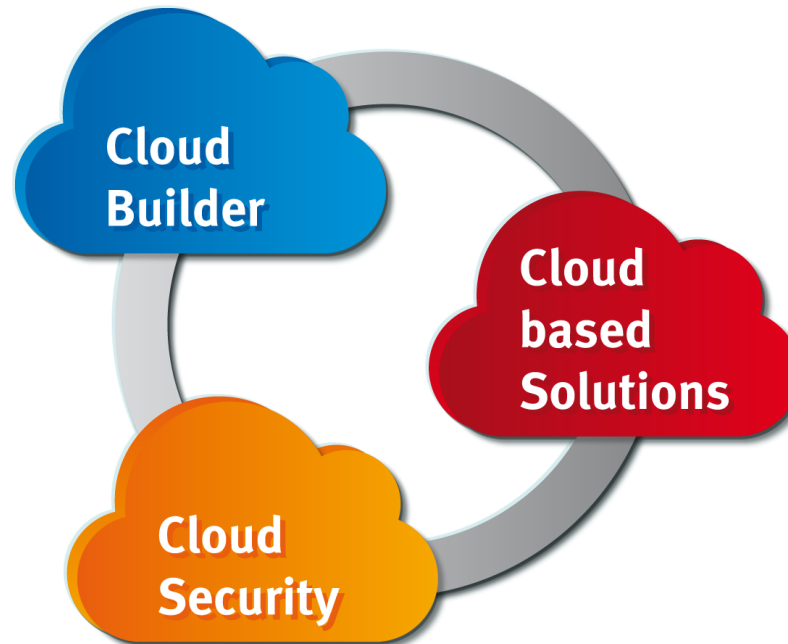


ENTERPRISE DATA CENTER

than clouds (\*)

y report

The **unique expertise** gained from being engaged in the full life cycle of the project coupled with our **technological proficiency**, make Intracom Telecom the **ideal partner** to rely on for creating your public or private cloud!



# thank you

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