

# ST Cloud

## Applicability and specifics of ST Cloud.

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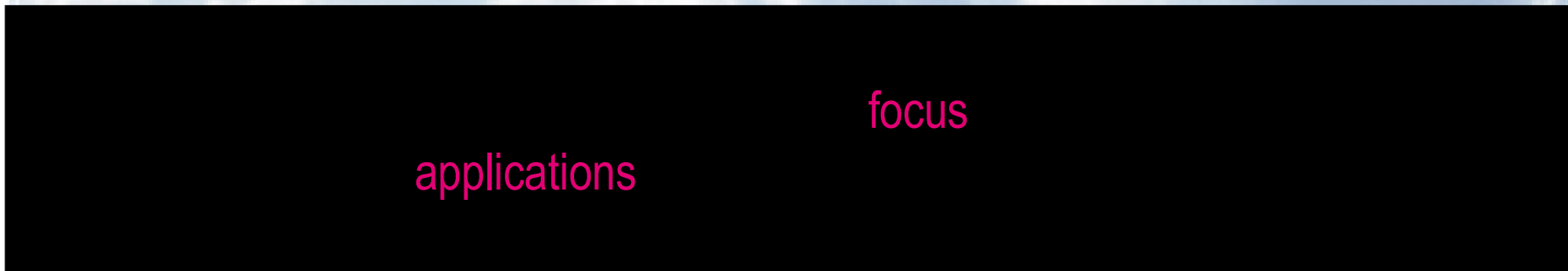


Zažime to spolu

# Cloud Computing

... it is not new technology, it is a new concept for building ICT.

- **Internet** brought for us the first cloud – the network cloud. We lost the knowledge what path our data are transferred, but we got a big advantage, a guarantee that a path to transfer our data is always available.
- Now **Cloud Computing** is bringing another “cloud” – we do not know, where exactly our servers and applications are, but we won an advantage that a right sized server (or computing capacity) to run our application is always available. At the final stage of building our cloud IT we will not know even which applications served our request...



## 5 Challenges of e-Government

To adjust IT infrastructure's computing power well, without over- or underestimates at the beginning

To increase computing capacity at unpredictable load-peaks promptly

To ensure continuous operation without outages

To provide enough powerful system resources for development and testing subsystems

To invest into eGov ICT smart, effectively and efficiently



# Slovak Telekom is introducing ST Cloud, a new service, which gets all 5 challenges under the controll

- Slovak Telekom is preparing the largest and **state of the art Data Center** for server housing, hosting and Cloud Computing in Slovakia.
- Server structure shall create **sufficient computing capacity** for the start of e-Government and even for later dynamic grow. There will be a readiness to master even peaks like during tax declarations submission day.
- For **uninterruptible operations** without resource outages are taking care many technologies (like doubled server components, redundant network path, mirrored data storages, multiply supplied power resources (Trafos, UPS, Diesel Generators) and fast **Disaster recovery** mechanisms in case of disaster outage.
- By activating the **testing** servers only for limited time extent we can save money. Moreover the test servers can achieve even the performance of the production servers.
- ST Cloud creates an opportunity for **government institutions** to **get dynamic** computing tool with very reasonable pricing because HW, SW and DC resources are shared with high level of elasticity
- ST Cloud shall provide a web based self service provisioning center for convenient **computing capacity adjustment.**



# What matters?

## Services, Quality, Time to market

### ■ Why ST Data center

- ICT Services – integral part of ST business strategy
- Long-term experience with DC operation and DC services – internally / externally
- Market need and potential
- Requirements related to quality and guaranties
- Energetic efficiency and Green DC
- We have vision ...



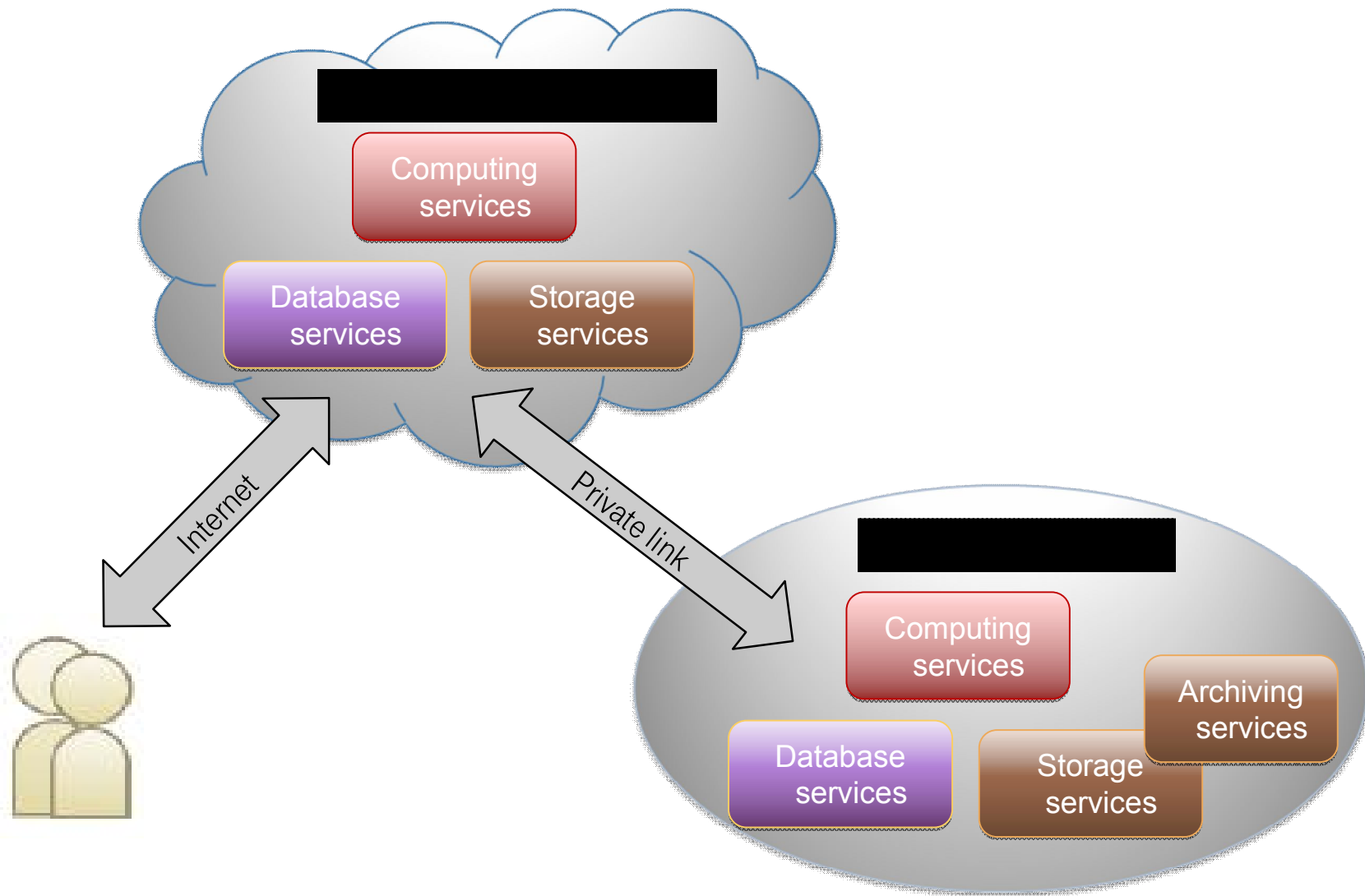
... and we deliver.



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# Cloud Computing for eGovernment



# Fears about Cloud Computing

- Security fears (real risks , mental risk feeling on managerial and expert level)
  - Data Transfer across state borders
  - Personal Data Protection
  - Legal enforcement in case of security incident (what can be solved inside European Union?)
- SLA fears
  - Suitable Service Level Agreement
  - Legal enforcement in case of service level discrepancy
  - Network availability (throughput, latency, routing and redundant path)
- Other
  - Communication and language barriers
  - Lack of personal contact for business negotiation and problem solving





# There are more providers of Cloud Computing, ... why ST Cloud can be the ideal solution for Slovakia?

ST cloud addresses the custom needs of the local companies:

- Servers are operated and Data are stored inside of Slovak Republic territory
- Each cloud needs high quality networking interconnection. With ST you have a unique possibility get served end to end including network connection
  - You can have guaranteed network bandwidth for connectivity to Cloud (interconnection between your internal IT infrastructure and Cloud servers),
  - Your data do not leave SR territory, moreover it does not necessarily need transfer through Internet (using more secure MPLS VPN technology),
  - Big peak processing in narrow time frame will not overload your internal data network
- Language barrier does not exist – your call to Helpdesk will be answered in Slovak
- For ST Cloud is valid Slovak legal frame. There are kept Slovak standards for business data protection, personal data protection, and ISO standards including 27001.
- Your contact with us is created directly through your KAM or other ST sales representative personally. You can have personal approach and flexibility.



# ST Cloud – broad offering – no limitations in creativity for your tailor- made solutions



## Private Cloud

- As a first product shall be introduced **Private Cloud**. With this we are addressing customers who require very high level of security for their apps and data. ST can design and deliver tailor made private cloud and we can resolve computing capacity requirements in western, mid and eastern Slovakia, all in TIER III DC category. Private Cloud resources and another computing capacities inside of customer DC can be interconnected via dedicated physical link.

## Public Cloud

- Information systems with less sensitive data can be operated easily in **Public Cloud** structure. It does not mean, that Public cloud solution is based on less secure technology. Higher risk is represented only by fact, that customer is accessing required services via internet. Certainty is encryption of all transferred data, high level firewall protection of servers, IDS/IPS and other security solutions.



# Private versus Public Cloud, a Duel without winner



## Private cloud

- Located inside of a internal network
- Integrated with Service Management – directly
- Owned and maintained by customer itself
- Services and SLA / tailor/made
- Enhancement of resources / limited by private capacity
- High investment cost (SW, HW, DC)
- Effective utilization of computing resources
- High availability
- Integration to the existing IS easier
- Auditable security fully under the control
- Data stay only inside of own network
- Independency in resolving emergency cases

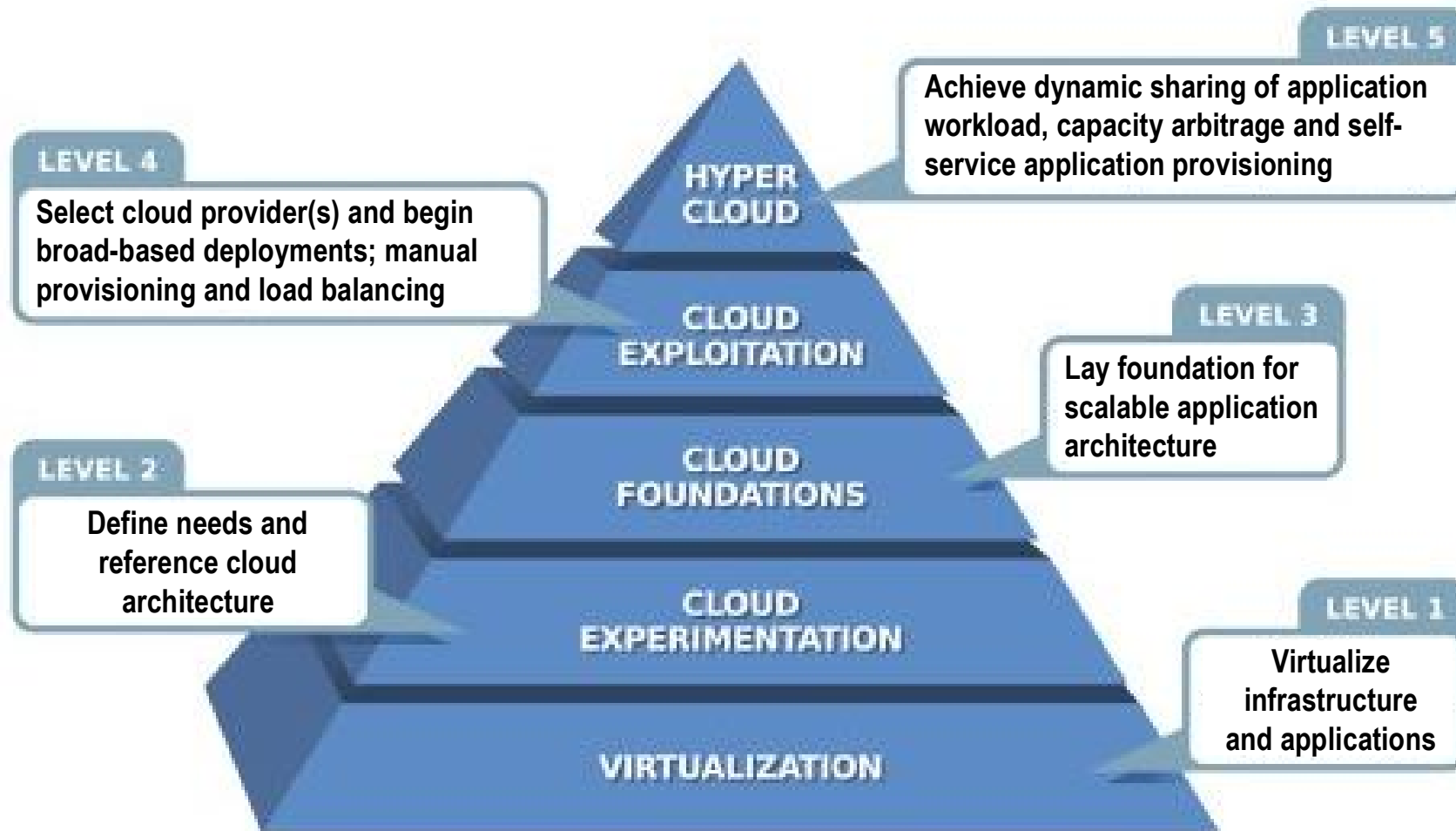


## Public cloud

- Accessibility from everywhere
- Self-care portal for customers
- Owned and operated by PaaS provider
- Services and SLAs´ are standardized
- Flexible scaling of computing resources
- Pay per use
- Lower cost - economy of scale
- Internet connection dependent, Latency
- Service Provisioning fast
- Security resolved but some legal standards like Sarbanes-Oxley uneasy
- Data stored in unknown location
- 24 x7 monitoring



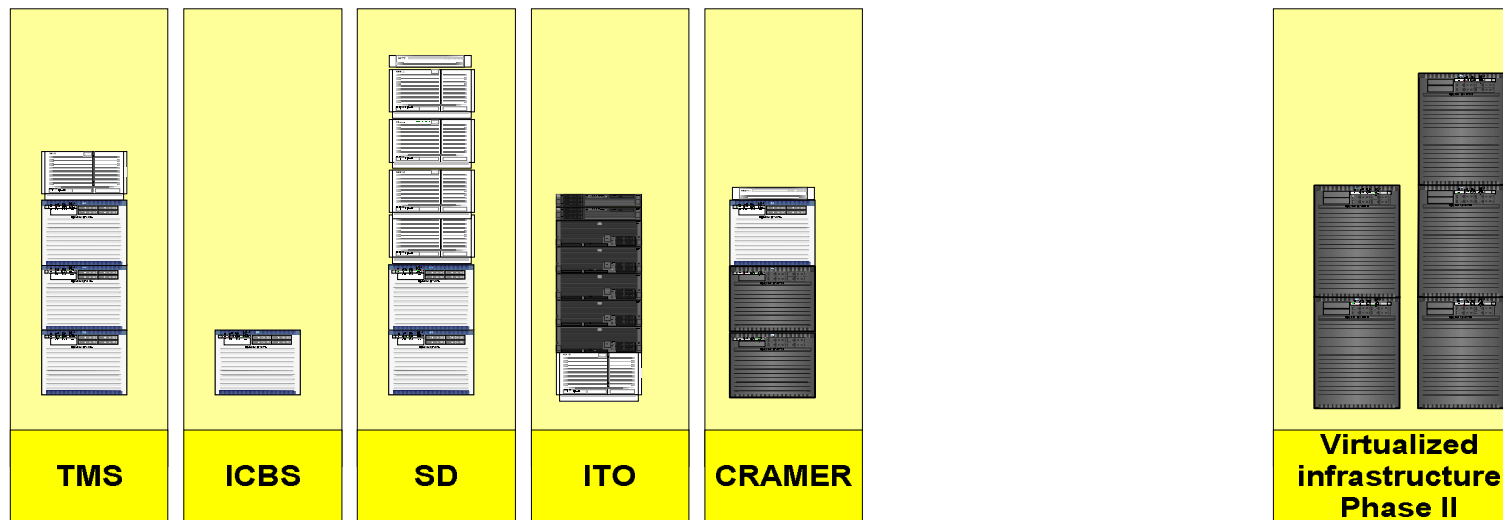
# Best practice: Cloud Computing adoption model



# The first step to Cloud Computing – Virtualization

## Server Virtualization

- ST accomplished 3 phases of server virtualization with virtualization ratio 3.27 or better
- Server virtualization brings to us
  - Operational excellence
  - Space economy
  - Energy savings
- A case study / ST UX virtualization, phase 2



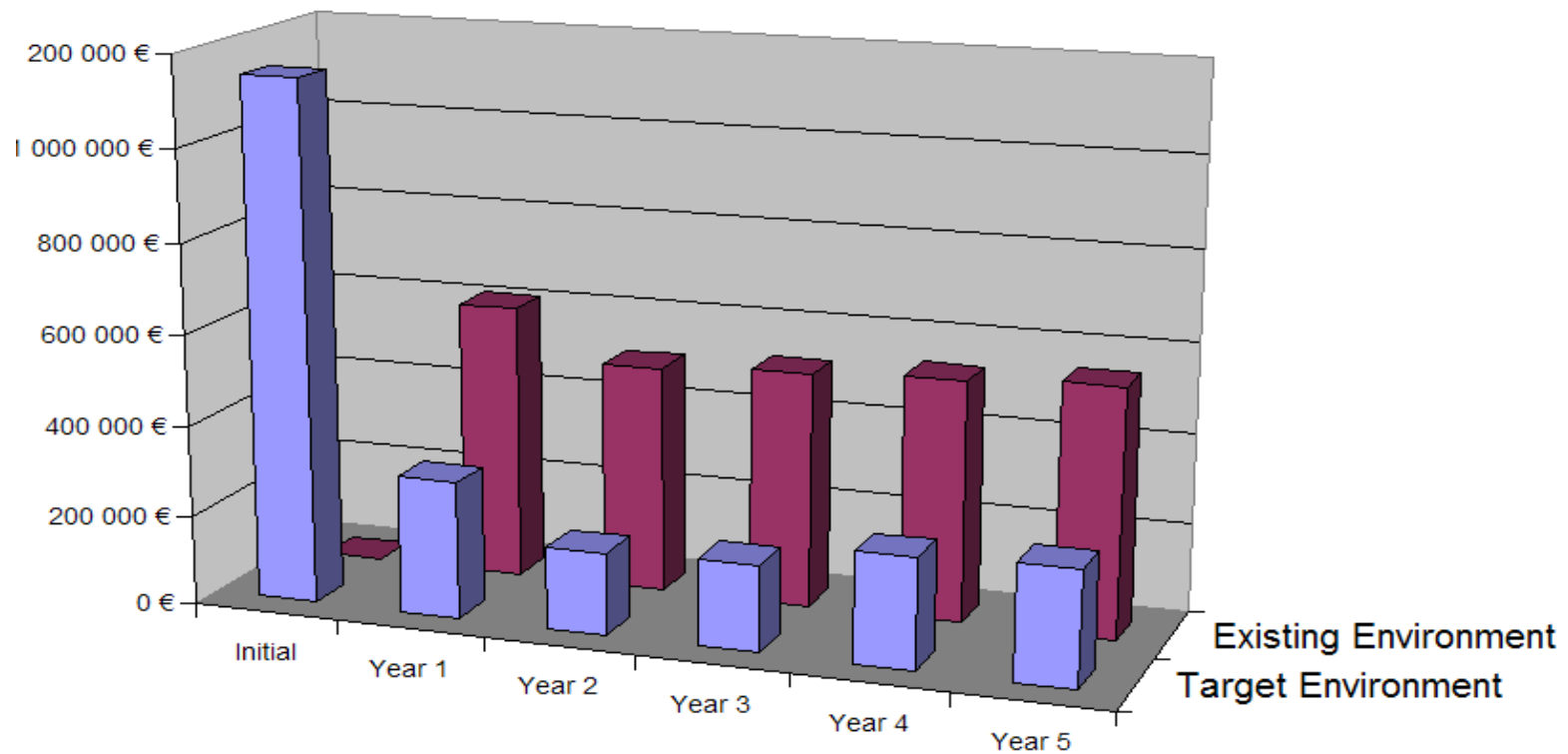
**24 x server  
(isolated, non- flexible)**

**5 x server  
(flexible pool of  
resources)**



# Virtualization - cost saving driver

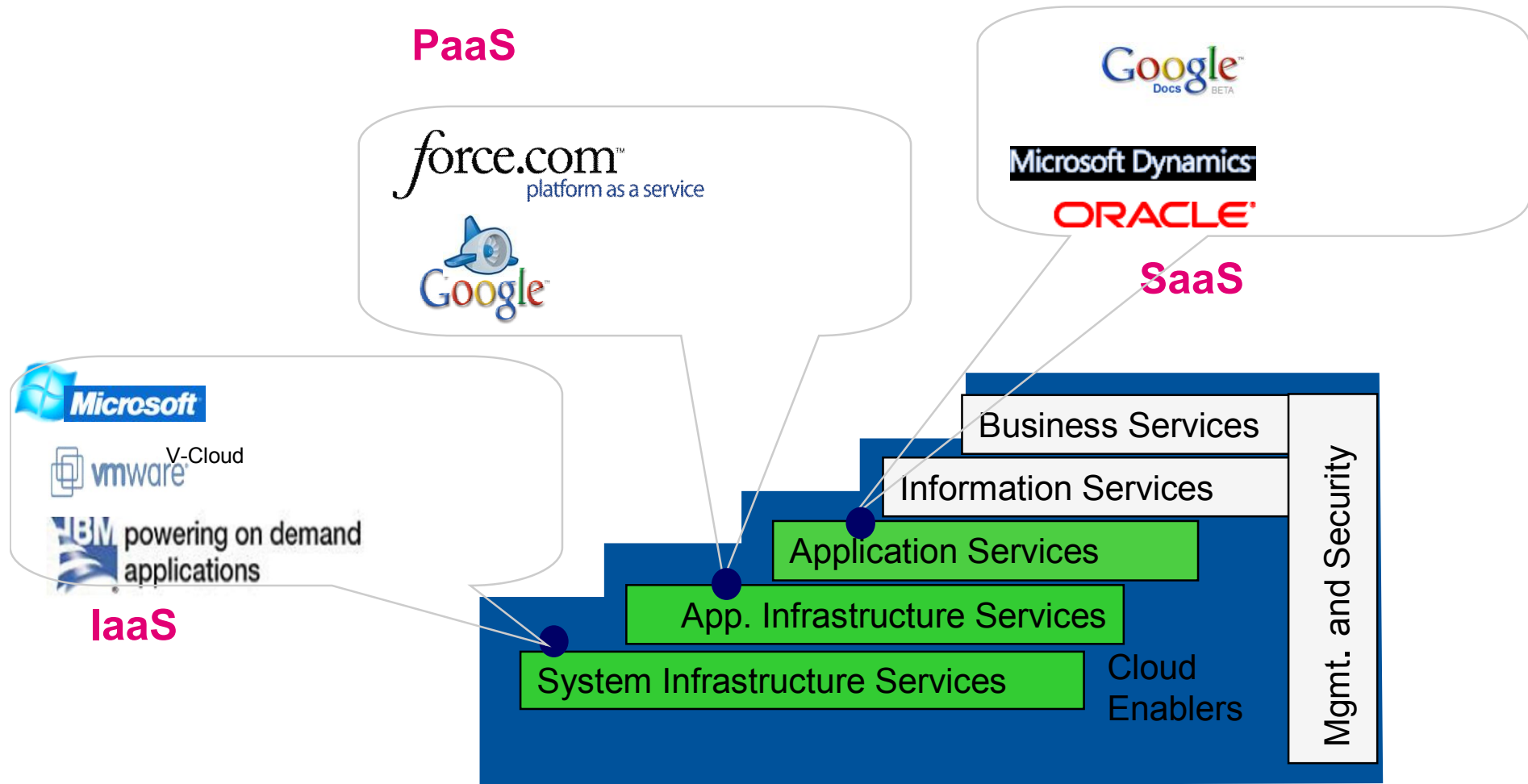
*Numbers only  
illustrative*



In our virtualization program we achieved virtualization ratio  $> 3.27$  and RIO  $< 4$  years



# Cloud based service delivery - sliced



By Gartner



# ST Cloud is not only for Government ...but for everyone who asks simplicity, elasticity and lower cost

- Product ST Cloud offers and will provide:
  - **IaaS** (IT infrastructure as a service – virtual server environment with secured storage technology, networking, backup and archiving services, high availability)
  - **PaaS** (IT platform as a service – which means HW, operational environments, middleware and DB environment)
  - **AaaS** (Application as a service, e.g. complete mail server with all services, ERP solution including application operation and maintenance, file server, web server, etc... )
  - **Server hosting and Housing** (private cloud deployment and operational excellence in state of the art ST Data center environment )





# Questions please?

## We enable your cloud.



Presentation prepared in cooperation with Tomas Bene, IT advisor in ST



The End.