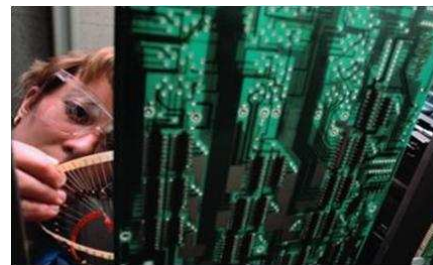




Knock, knock, knockin' on infrastructure's doors



*TestNetnajaarsevenement2011CloudTesting
WimDemey(CTG)*

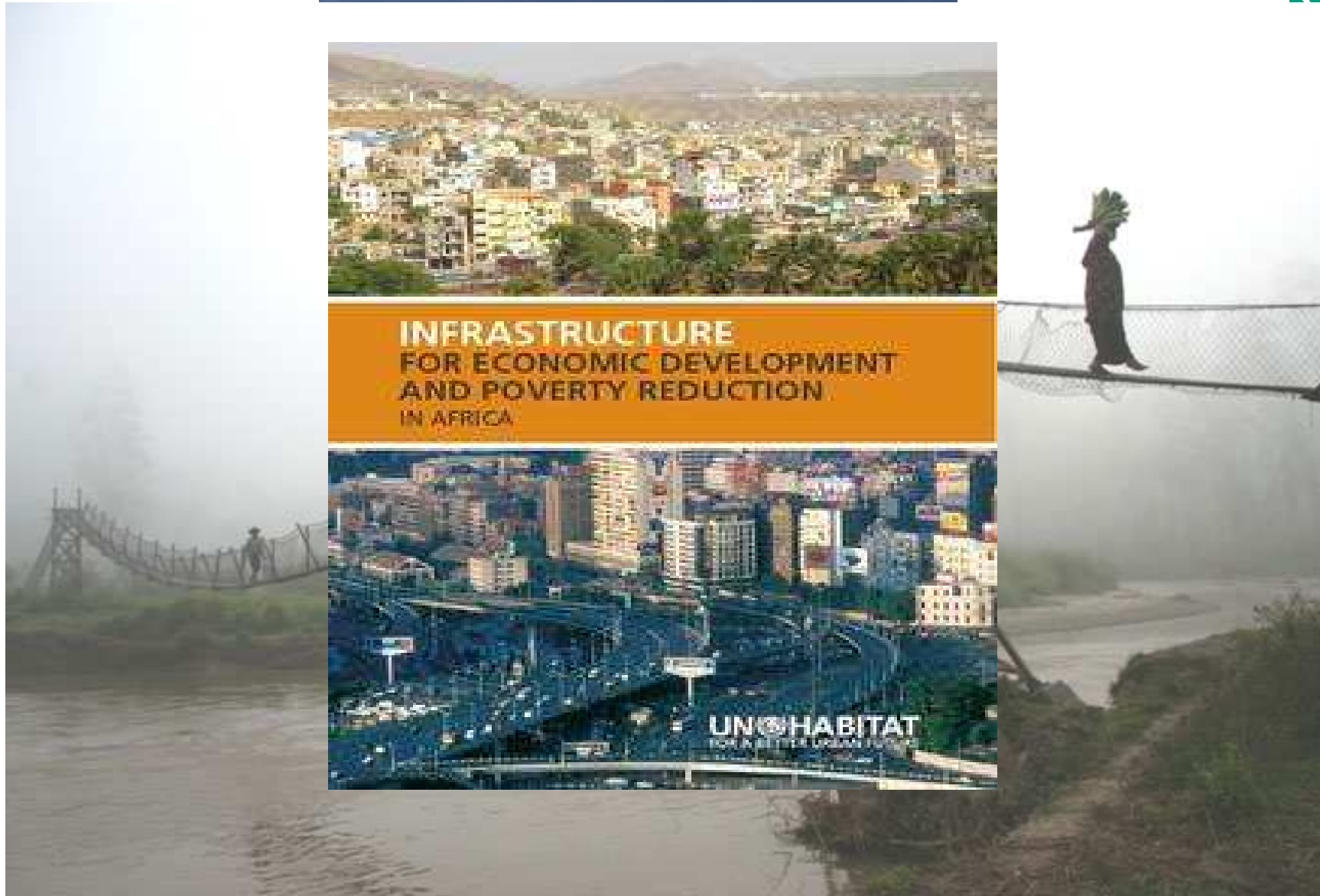


Agenda



- Infrastructure matters
- What about IT?
- Trends with impact on infrastructure
- State of infrastructure testing
- Key to unlock the doors
- Customer case
- Conclusion
- Questions

Infrastructure matters!



WhataboutIT?



- Some Facebook statistics



- If Facebook was a country -> third biggest country (800 million users)

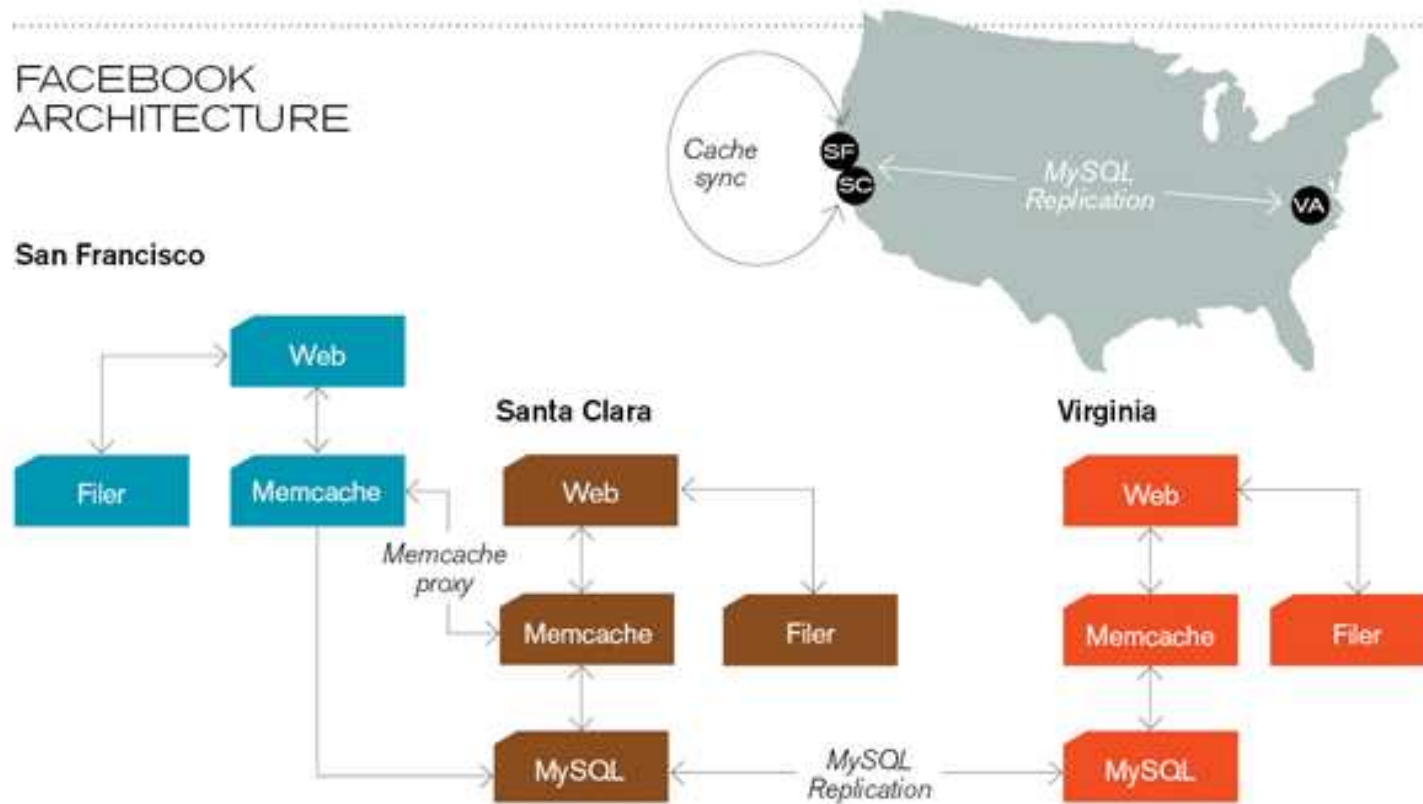
RANK	COUNTRY	POPULATION	DATE OF INFORMATION
1	<u>China</u>	1,336,718,015	July 2011 est.
2	<u>India</u>	1,189,172,906	July 2011 est.
3	<u>United States</u>	313,232,044	July 2011 est.

- 20 million Facebook applications installed every day
- >30 billion pieces of content shared each month
- 10,000 new websites integrate with Facebook every day
- >250 million active users access Facebook through mobile devices
- 200 mobile operators in 60 countries deploy and promote Facebook products

WhataboutIT?



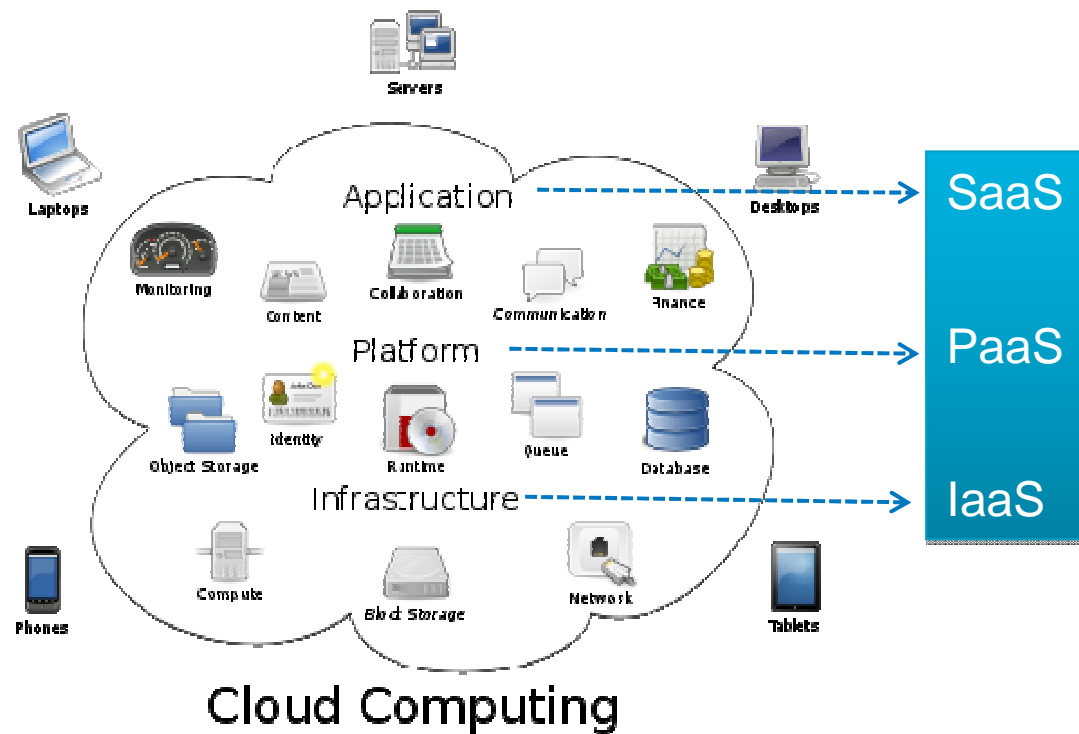
- Huger requirements for infrastructure of Facebook and a lot of connectors



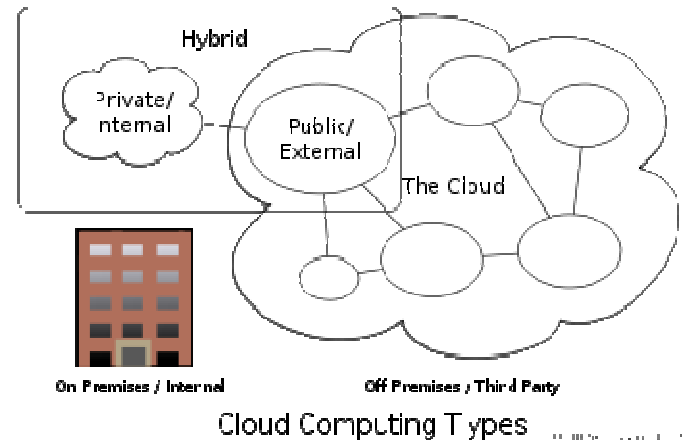
Trends with impact on infrastructure



- Natural evolution of virtualization towards cloud computing



computing



Trends with impact on infrastructure



- Some figures of the digital universe ¹
 - In 2011 barrier of 1,8 zettabytes (1.8 trillion gigabytes) is passed
 - Digital universe is doubling every two years
 - Over next decade #servers (virt./phys.) worldwide will grow by 10
 - Number of files the data center has to deal with will grow by 75
 - Number of IT professionals in the world will grow by <1,5

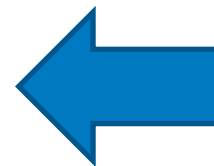
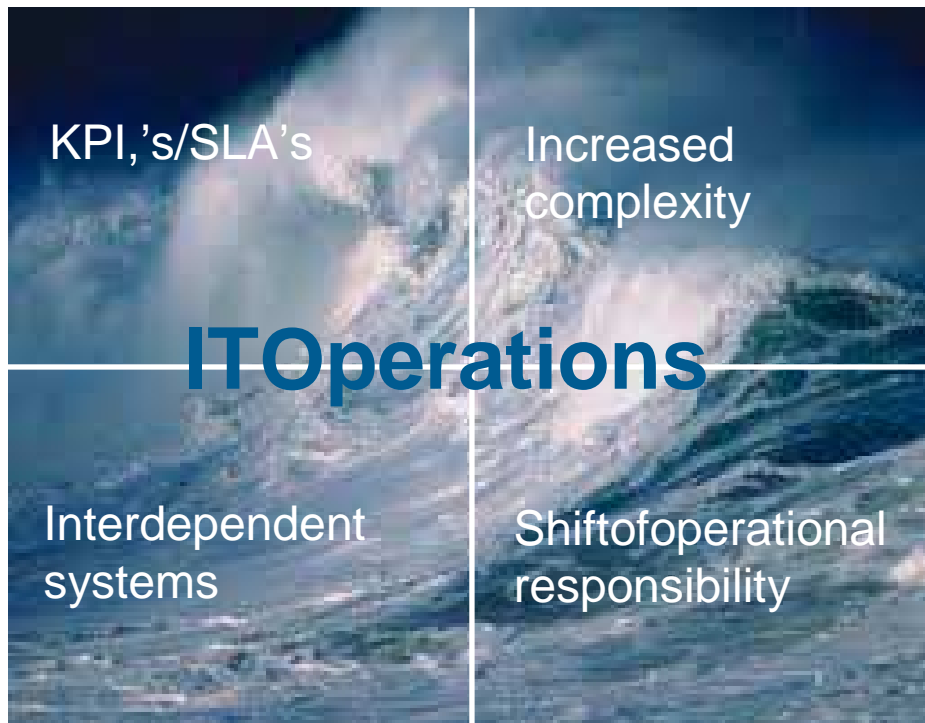


¹ Based on study *IDC iView "Extracting Value from Chaos," June 2011, sponsored by EMC.*

Trends with impact on infrastructure



- IT operations becomes a heavy storm



Quality attributes in scope

- Connectivity
- Continuity
- Data controllability
- Performance
- Security
- Suitability
- Maintainability
- Manageability
- Portability

⇒ Conflict of interests

⇒ Increased risk on major failures due to human factors & processes

State of infrastructure testing



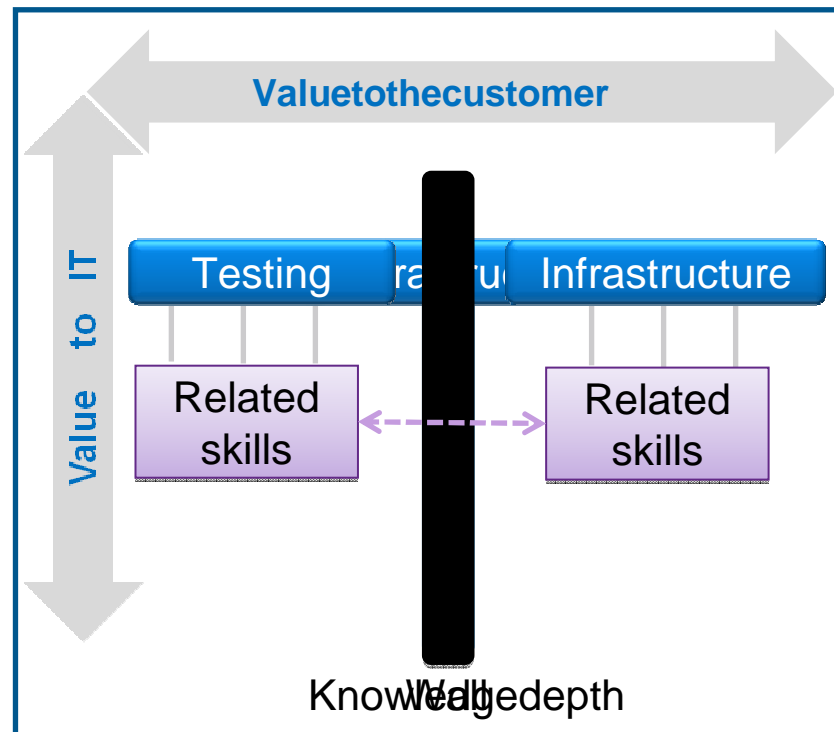
- Infrastructure testing is immature due to:
 - Lack of definition for infrastructure testing
 - Patch and pray approach
 - Rely on “acquirer-supplier” or “buyer-builder” model
 - Testing limited to “Non-customer-facing” tests
 - Misuse of scheduled downtime slots and disaster recovery systems
 - Static table-top testing by lack of testing environment
 - Testers are not involved in infrastructure teams

Key to unlock the doors



Create T-shaped teams

- Breakdown silo's between infrastructure– testing
- Interdisciplinarity needed during troubleshooting



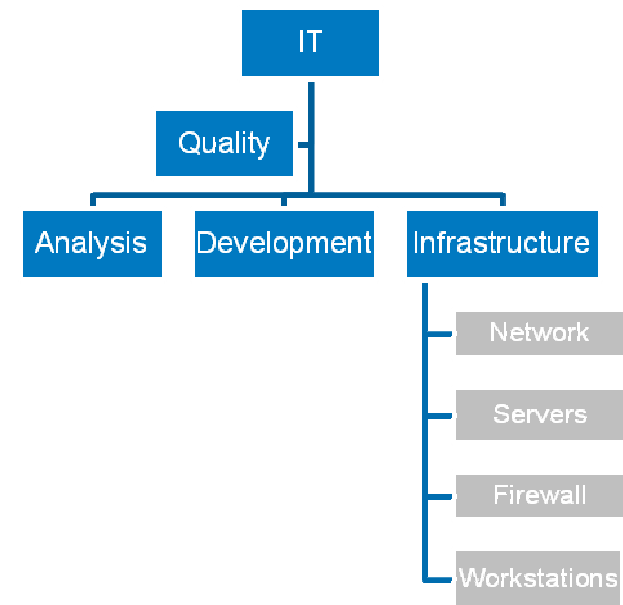
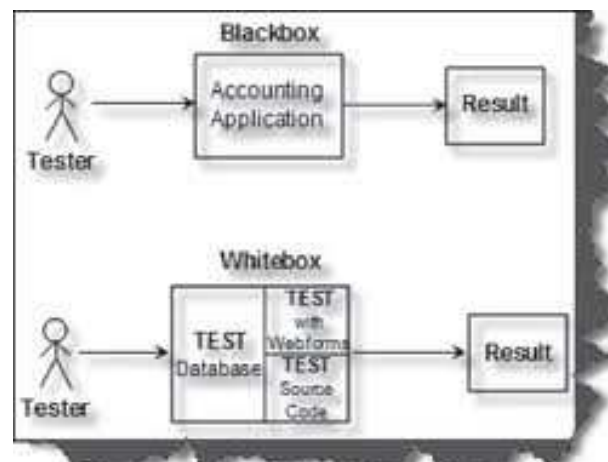
Keytounlockthedoors



Define unambiguously what is infrastructure testing

- Use the appropriate point of view

OSI MODEL		
7	Application Layer Type of communication: E-mail, file transfer, client/server.	UPPER LAYERS
6	Presentation Layer Encryption, data conversion: ASCII to EBCDIC, BCD to binary, etc.	
5	Session Layer Starts, stops session. Maintains order.	
4	Transport Layer Ensures delivery of entire file or message.	
3	Network Layer Routes data to different LANs and WANs based on network address.	LOWER LAYERS
2	Data Link (MAC) Layer Transmits packets from node to node based on station address.	
1	Physical Layer Electrical signals and cabling.	



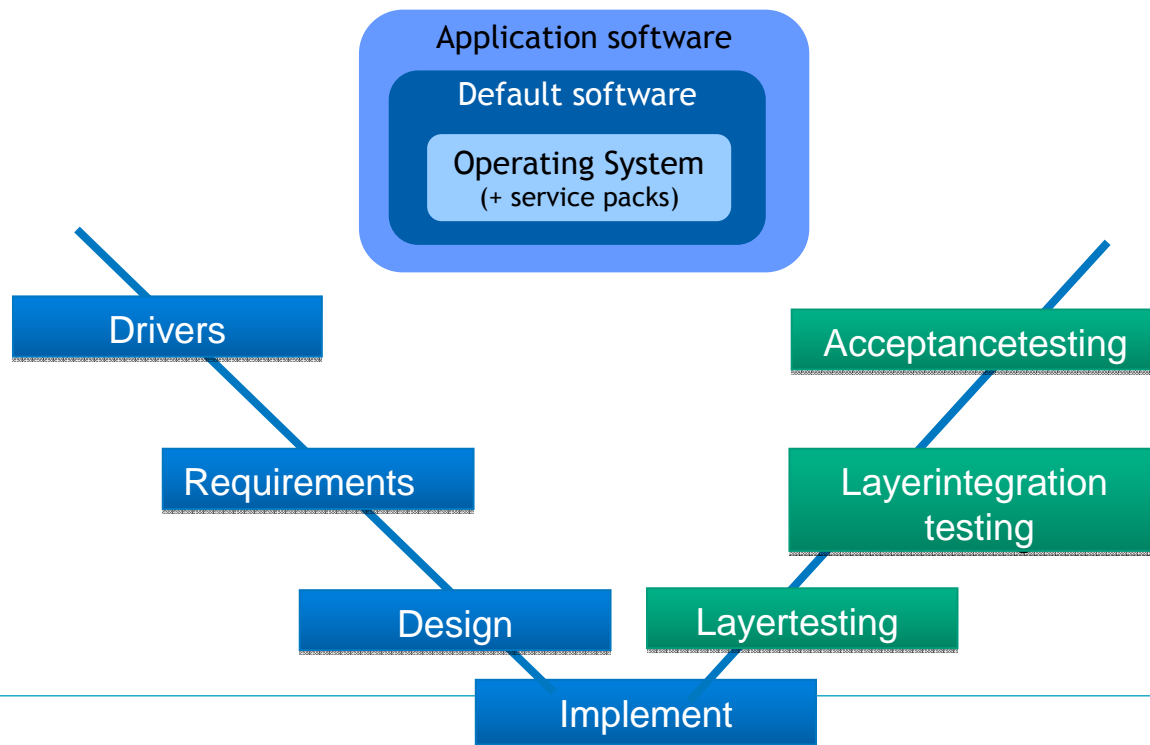
Infrastructure testing is any test activity performed as a result of an intervention made on hardware, network and/or software components which are part of an integral infrastructure platform in order to facilitate applications in a managed and controlled way

Key to unlock the doors



Adapt traditional test approach to the context

- Risk-based testing
- Structured but pragmatic
- E.g. Workstation migration testing → layered testing needed



Key to unlock the doors



Embed testing within broader quality approach for infrastructure

Figure 2. The Levels of Gartner's I&O Maturity Model

	Survival	Awareness	Committed	Proactive	Service-Aligned	Business Partnership
People	No organizational focus on IT infrastructure and operations	Defined, technology-centric organization for IT infrastructure and operations	Technology-centric organization; investment in IT service desk function and staff	Process-centric organization, defined governance structure	Customer- and business-focused, IT service and delivery centric organization, formal governance	Business optimization and entrepreneurial focused culture
Process	No formal IT processes for IT infrastructure and operations	Ad hoc, but aware that processes are necessary; dependent on tools to implement de facto processes	Defined processes for IT service support and project management	Repeatable and individually automated; focus on IT service delivery-related IT processes	Integrated, automated and extended beyond I&O; focus on all service and business management processes	Dynamic optimization of IT services, implement processes fostering business innovation
Technology	No formal strategy or execution on technology investments	Basic management tools; no formal infrastructure hardware or software standards	IT support and project-related management tools; desktop hardware/ software standards defined; begin infrastructure standardization/ rationalization	Formal infrastructure standards and policies; process and domain-centric management tools; virtualization foundation in place	Formal IT management process/tools architecture; shared services; aggregated capacity management	Proactively promoting new technologies and impact to business; real-time infrastructure
Business Management	No formal IT business management functions	Very little outside of budgeting	Project management office	Financial management, formal key performance indicators	IT service cost metrics, competitiveness	Business contribution metrics
Level:	0	1	2	3	4	5

Source: Gartner (October 2007)

Customercase



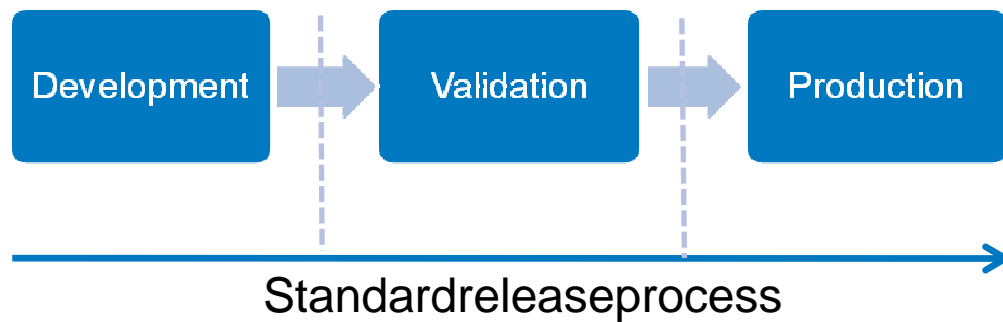
- Context
 - Independent team for testing & quality
 - Infrastructure team is separated department divided in several subareas



Customer case



- Context
 - Infrastructure is outsourced and managed by third-party
 - 3 environments



- Process of involvement of test team

Phase 1

- Ad hoc way of working
- For critical projects -> structured test approach
- Doubts about value of testing

Phase 2

- Growing awareness about role of test team
- Issues in production during pilot waves
- Basis for recurring test approach

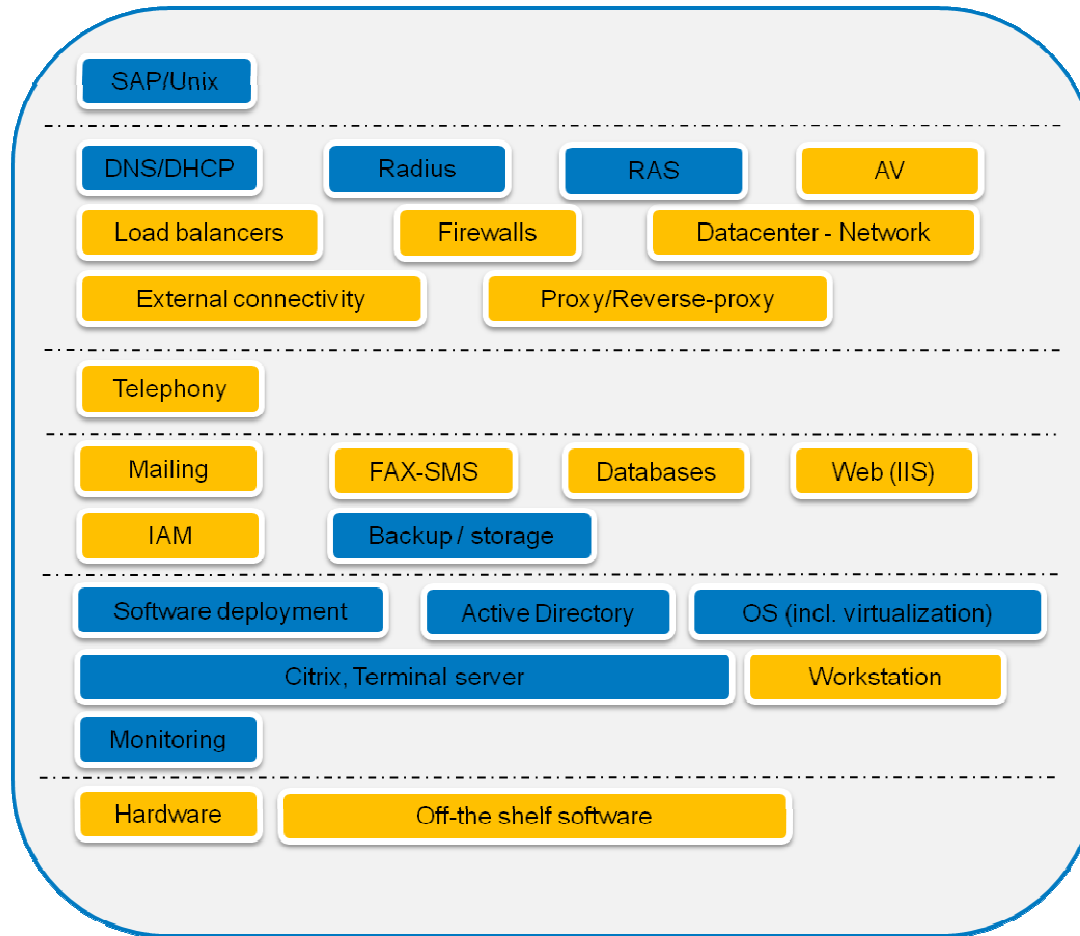
Phase 3

- Infra team demands by default test coordinator
- Increased involvement in project & maintenance mode
- Test coordinator is real quality gate keeper
- Request for test automation of recurring regression test cycles

Customercase



- Current covered areas by test team

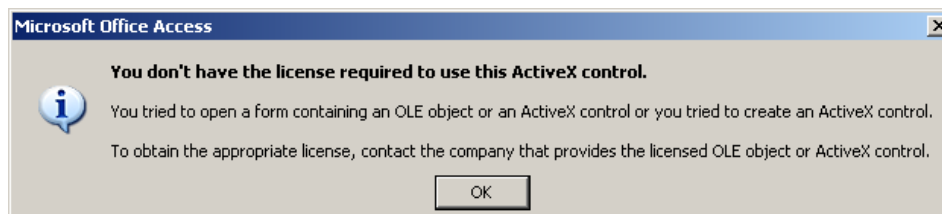


Customer case

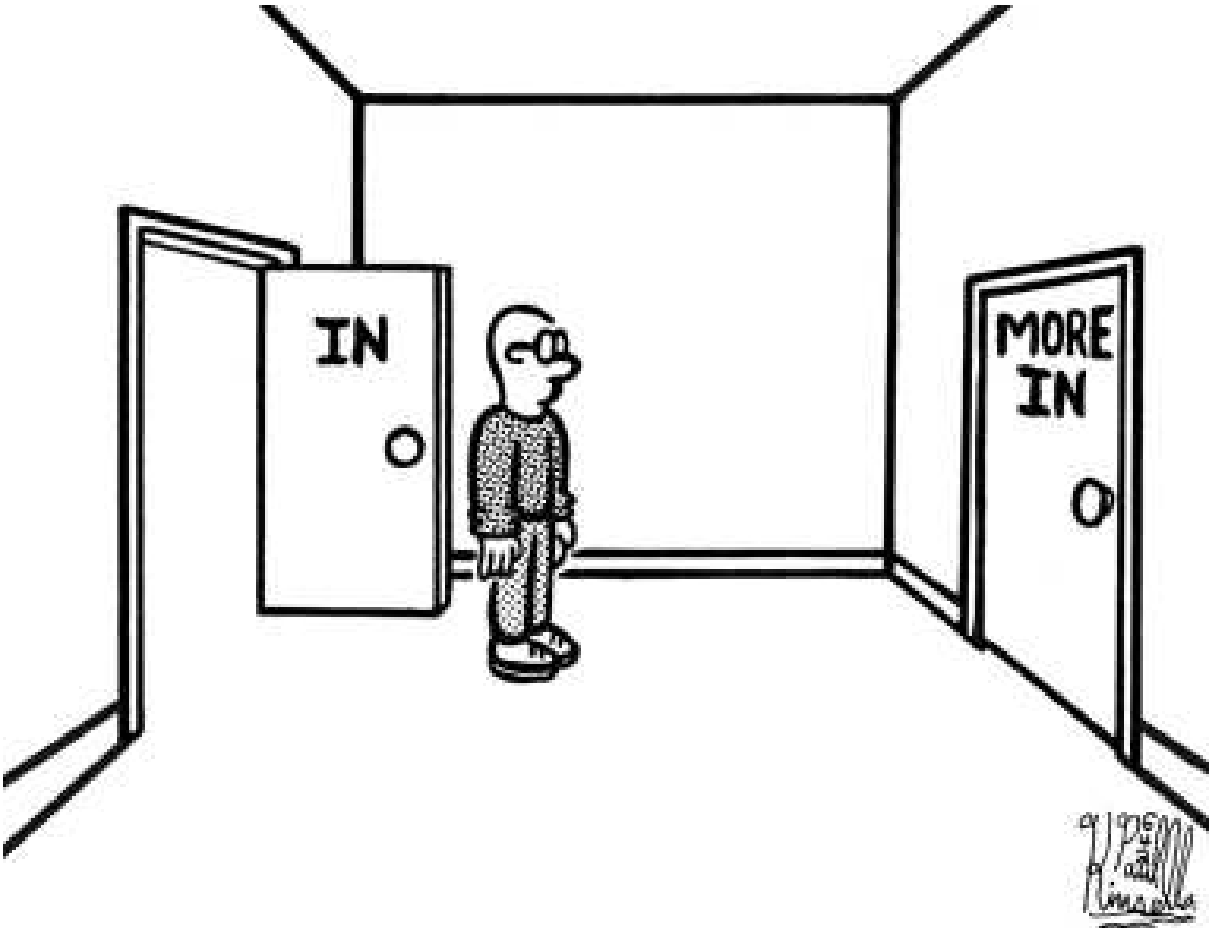


Keys for success

- T-shaped team
- Start with very small & pragmatic steps
- Active participation in troubleshooting
- Combine coordination with hands-on work
- Set up test lab with different types of hardware
- Facilitate troubleshooting meetings in case of interdependent mental issues
- Be and remain critical



Conclusions



Questions



- Contactdetails

wim.demey@ctg.com

