



Cloud Computing - Cyber Security Challenges for the Finance Sector

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Positioning ENISA activities



Cloud Opportunities for Finance Sector



Economies of Scale

- Better ROI
- More efficient resource utilization also means cost savings

Support innovation

- Easier deployment of new services
- Faster time to market

High Resiliency

- Better back up services
- Better business continuity

Standardised solutions

- Better patch management
- Better software update management
- Portable and interoperable

Cloud Challenges for Finance Sector



Isolation Failures

- One Cloud customer might be able to influence the resources of another (CPU, Memory)
- ..or have access to another customers' data (data breach)

Compliance Risks

- Provide enough evidence for taking care of data
- Prove prudent risk management practices

Loss of Governance

- Control sufficiently the resources in the Cloud
- This also affects security

Vendor Lock-in

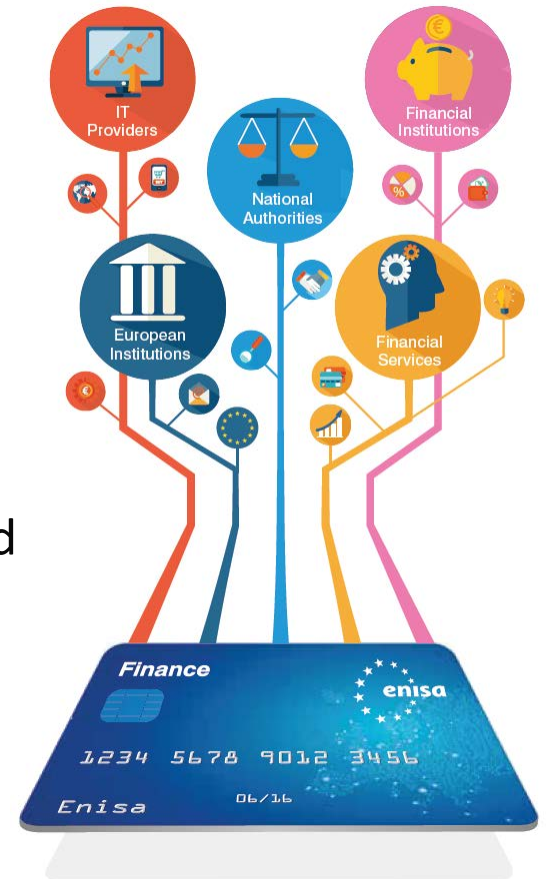
- Always have exit strategy
- Properly remove the data from the Cloud

ENISA's study



Objectives of the study

- Identify the status on cloud adoption in EU and elsewhere
- Identify good practices at technical and policy level
- Recommend good practices to be used by banks and regulators
- Propose recommendations to policy makers, banks and Cloud providers



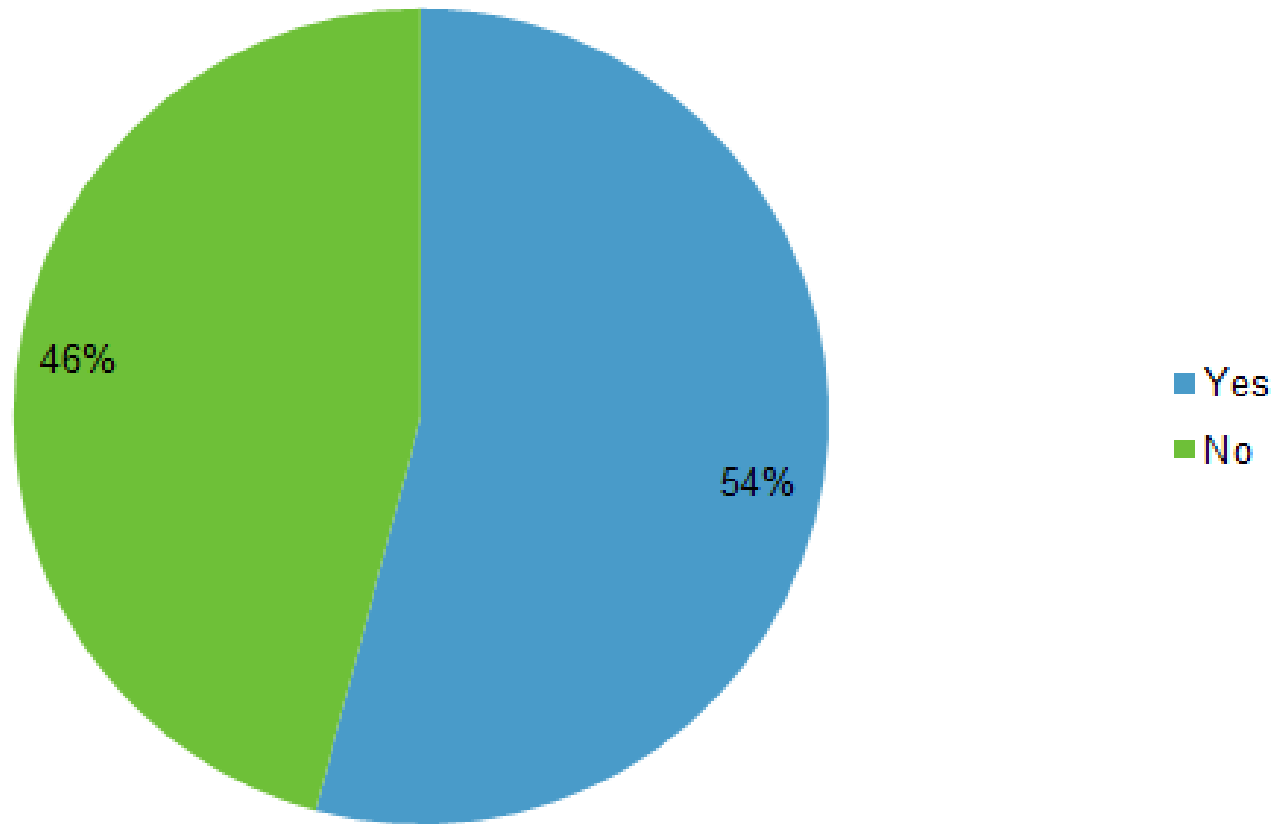
Cloud Adoption - Status



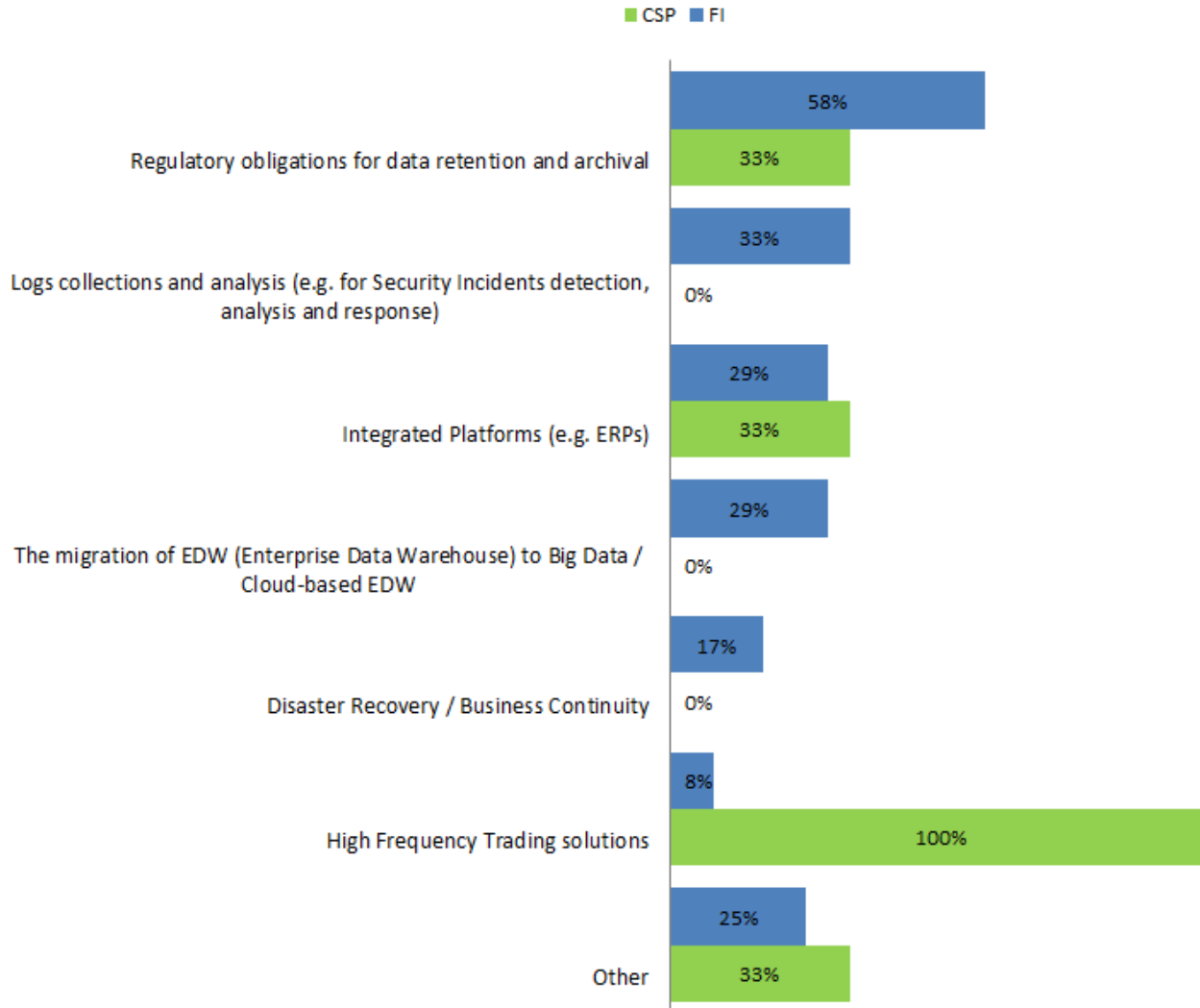
- Existing regulations and policies focus on finance core operations and do not cover sufficiently cloud cyber security
- Challenges with data jurisdiction and data protection rules
- Not enough understanding/knowledge_on cloud challenges by regulatory authorities
- Unclear regulatory and policy environment makes difficult deployment of Cloud for financial institutions
- Many standards in the cloud area complicate both financial institutions and regulators to deploy cloud, as none of them is widely accepted
- ad-hoc implementations focus on clouds in non-core business; limited strategic view



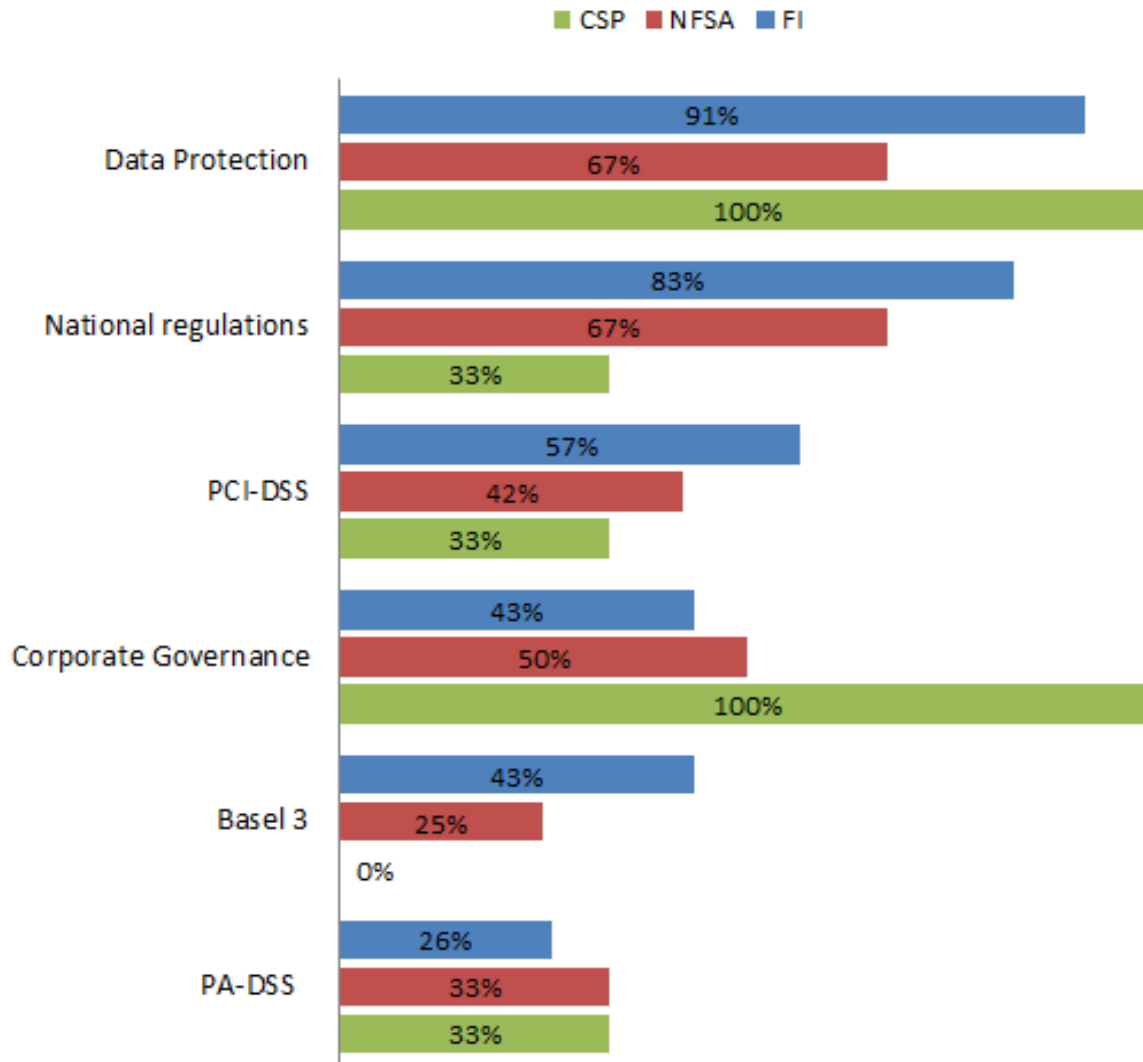
Has your Financial Institution developed a detailed corporate risk assessment for Cloud Computing?



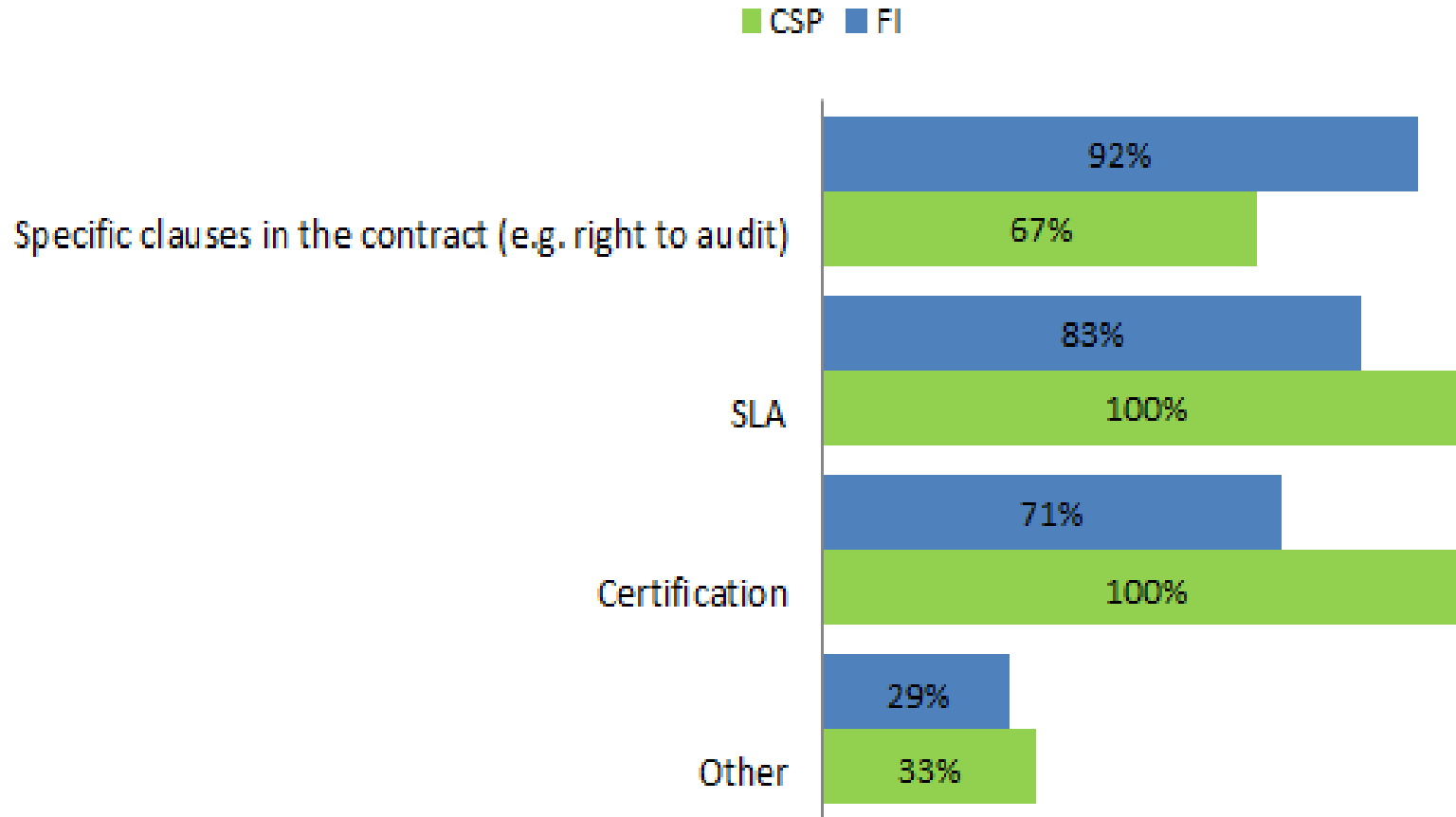
Main challenges to cloud computing



Which regulations mainly impact Cloud adoption?



How do you ensure compliance?



Recommendations



Cooperation between FIs, NFSA and CSPs

- Good practices and guidelines in the area of Cloud security
- EU wide harmonization of legal and regulatory requirements

Risk assessment and cloud strategy

- FI to develop a corporate risk assessment and strategy for deploying Cloud

Transparency & Assurance

- CSPs to provide proven evidence of good cyber practices (incident handling, resilience, ..) in use

Awareness campaigns

- FI, NFSA and CSP to co-operate on bridging the knowledge and awareness gap on cyber security of cloud



Next Steps



- ENISA remains ready to:
 - Provide more expert support where useful and needed to address the identified challenges
 - Continue as a catalyst for the needed information exchange, cooperation and discussions between FIs, regulators and CSPs
 - Continue the established cooperation with the regulatory authorities



Co-operation with other initiatives



- The SecuRe Pay (Security of Retail Payment Systems) working group, namely
 - secure communication,
 - secure customer authentication
 - incident reporting
- The Task Force on IT Risk Supervision
 - Transversal IT risk identification and analysis
 - IT risk and experiences - Cloud computing
 - Guidelines on the assessment of IT risk
 - Cooperation and training



Conclusions



- cloud modernizes the Financial Sector and achieves significant business benefits
- cyber security is key enabler for the smooth cloud adoption
- existing policies and regulations do not cover fully cyber security challenges related to cloud
- policy makers are not fully aware of the major cyber security challenges
- Plethora of good practices on cloud but not focused on finance sector
- limited information sharing among public and private sector on major cloud incidents affecting finance sector



ENISA will co-operate with policy makers (e.g. EBA, NFSAs) & private sector (e.g. banks, cloud providers) to accelerate cloud adoption in the finance sector



Thank you

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