Understanding How Vendor Lock-In Impacts on Adoption of Cloud Computing

About this Questionnaire

Dear Sir / Madam

Thank you for participating in this survey. This study is concerned with investigating the current usage and adoption level of cloud computing by large corporations or small to medium-sized enterprises (SMEs). More specifically, the research aims to investigate the business related risks of vendor lock-in affecting cloud adoption and implementation by organisations. The focus of this questionnaire is to identify and evaluate the risks and opportunities which affect stakeholders' decision-making about adopting cloud services. The questionnaire compromises of 28 short questions and you will need 8-10 minutes to complete it. This survey is targeted at three primary groups: Cloud Services Buyers (organizations or users that have adopted or looking forward to adopt cloud solutions); Cloud Service Providers (providers of cloud solutions, including independent software vendors or ISVs and service providers); and Cloud Advisors (consultants and third-party advisors who work with cloud buyers and provide guidance on cloud adoption strategies).

Participation
In return for the contributions, participants will receive a summary of the research findings once analysed, together with an e-copy of the final research results once published in an academic journal.

Privacy Statement
All information provided by respondents will be strictly confidential (individuals will not be identified) and will be purely used for academic purposes. Data collected will be kept securely. Participation is completely voluntary and you may stop and leave at any time.

In order to progress through the survey, please use the following navigation links:

Continue to the next page of the survey by clicking the *Continue to the Next Page* >>

Go back to the previous page in the survey by clicking on the *Previous Page* << link.

Finish the survey, by clicking the *Submit the Survey* >> link.

Appreciation
I would like to thank you very much in advance for kindly agreeing to participate in this survey. Should you have any questions or comments about this study or the questionnaire please contact the researcher *(Justice Opara-Martins)* using the information below.

Many thanks.

Justice Opara-Martins (AMBCS)

Doctoral Researcher
Faculty of Science and Technology
Bournemouth University
P517B, Poole House
Talbot Campus, Fern Barrow
Poole, Dorset, BH12 5BB
United Kingdom

Tel: +44 (0) 1202 961326
Mobile: +44 (0) 776 585 6758
Email: joparamartins@bournemouth.ac.uk

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Organisational Demography

*1. Which industry best describes your organization?

[▼]

*2. What is the size of your organization?

- ○ 1-24 Employees
- ○ 25-50 Employees
- ○ 51-250 Employees
- ○ 251-500 Employees
- ○ 501-1000 Employees
- ○ Over 1000 Employees

*3. Your Department

- ○ Accounting
- ○ Administration
- ○ Finance
- ○ Human Resource
- ○ IT

- ○ Logistics / Warehouse
- ○ Marketing / Sales
- ○ Operations
- ○ Procurement
- ○ Research and Development

Other

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✱4. Which of the following people in your organization are making <u>buying decisions</u> on cloud services? (Please check all that apply)

☐ CEO

☐ IT Management

☐ CIO

☐ CTO

☐ Business Line Manager

Other (please specify)

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Business View on Cloud Computing

5. Which of the following best describes the <u>adoption</u> of cloud computing in your organization?

- ☐ We are already using cloud services

- ☐ We utilize combination of cloud services and internally owned applications for organization needs

- ☐ We expect to adopt cloud services within the upcoming 12 months

- ☐ We have no intention to adopt cloud computing

*6. The reasons behind using cloud computing services in your organization are? (Please check all that apply)

☐ Better scalability of IT resources	☐ Improve security
☐ Collaboration	☐ Increase storage capacity
☐ Cost savings	☐ Greater IT efficiency and agility
☐ More flexibility	☐ Business continuity, regular backups, and disaster recovery capabilities
☐ Risk management	☐ Adding redundancy to network infrastructure to increase availability and resilience

Other (please specify)

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*7. What does your organization view as the most important benefits of cloud computing? (Please check/enter top 3 from the list)

☐ Pricing flexibility

☐ Increased collaboration

☐ Reduced infrastructure cost

☐ Security and Backup

☐ Capacity, scalability and speed

☐ Other (please specify)

[   ]

☐ Availability, geography and mobility

☐ Increased business agility and greater productivity

☐ Business Intelligence (BI)

☐ Competitiveness

*8. What are the greatest barriers for implementing cloud computing in your organization? (Please check all that apply)

☐ System and data security risks

☐ Over dependence on a single cloud provider

☐ Legal and regulatory compliance issues

☐ Data access and incompatibility issues

☐ Lack of integration between various cloud networks

☐ Data protection, privacy and other jurisdictional issues

☐ Implementation/transition/integration costs are too high

☐ Loss of control (system availability and business continuity risks etc)

☐ Inability to move data from one vendor to another or back onto our IT infrastructure

☐ We don't have cloud experts on staffs to implement a private or hybrid cloud

Other (please specify)

[   ]

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*9. Are you considering moving business critical systems (or applications) to the cloud?

○ We have already moved one or more of our business critical systems to the cloud

○ We plan to move one or more of our business critical systems to the cloud in the upcoming 12 months

○ Perhaps, but not within 12 months

○ We have no considerations to move business critical systems to the cloud

Other (please specify)

Vendor Lock-In Risk Assessment and Management

*10. How important is it for your organization to integrate existing (on-premise) IT asset with cloud-based services?

○ Extremely important

○ Very important

○ Moderately important

○ Slightly important

○ Not at all important

Other (please specify)

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*11. How would you express your current understanding of the term "Vendor Lock-In" in cloud computing context?

○ Excellent understanding

○ Good understanding

○ Basic understanding

○ Poor understanding

○ No understanding

*12. "Vendor lock-in in cloud computing is the situation in which customers (i.e. businesses and end-users) are dependent on a single cloud providers technology solution or service and cannot easily move in the future to another cloud offering from a different vendor without substantial costs and/or inconvenience".

Based on the definition above, do concerns about Vendor Lock-in deter your organization from adopting cloud services?

○ Definitely yes   ○ Possibly yes   ○ No   ○ Not sure

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*13. Please identify which interoperability or data portability issues you have encountered when using cloud services OR are otherwise aware of. (Please check/enter all that apply)

- ☐ Inability to pool services from different providers

- ☐ Authentication and authorisation issues

- ☐ Issues with compliance of security policies and procedures

- ☐ Virtual machine management (provision, contextualisation, de-provision) issues

- ☐ Proprietary data format (incompatibility issues with existing software)

- ☐ Inability to move to another service provider or take data in-house

- ☐ Lack of integration points with existing management tools

- ☐ Data management and access challenges

Other (please specify)

[   ]

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*14. From your perspective, which existing or emerging standards support Interoperability across the cloud and Portability of data (from one cloud provider to another)?

☐ Open Cloud Computing Interface (OCCI)

☐ Open Data Protocol (OData)

☐ Distributed Management Task Force (DMTF) Cloud Data Management Interface (CDMI)

☐ DMTF's Open Virtualization Format (OVF)

☐ International Standards Organisation (ISO) CDMI

☐ Unified Cloud Interface (UCI)

☐ Cloud Computing Interoperability Forum (CCIF)

☐ CTP – Cloud Trust protocol

☐ OpenStack

☐ IEEE P2301 and P2302 Standards for cloud-to-cloud interoperability and portability

☐ Not sure

Other (please specify)

[   ]

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*15. To the best of your knowledge, how can the <u>risks of Vendor Lock-in</u> be minimised in cloud computing environment?

☐ Use standard software components with industry-proven interfaces

☐ Ensure application architectures and IT operations procedures that are not unique to a specific vendor platform

☐ Considerations for the use of open and published technologies (standardisation)

☐ Practice and conduct due diligence when hiring cloud providers

☐ Well-informed decisions before selecting vendors and/or signing the cloud service contract

☐ Build perceived lock-in risks into initial risk assessment and mitigate by choosing a vendor with limited risks

☐ Involve legal teams and security professional when negotiating cloud providers contract terms and SLA

☐ An open environment of continuous competition between providers in the cloud services market

☐ Not sure

Other (please specify)

[   ]

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Organization Strategic Approach to Cloud Utilization

*16. Typical cloud computing services are classified into three main categories; Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS), and Software-as-a-Service (SaaS) as explained below.

Which of these types of cloud computing is your organization currently using?

☐ IaaS provides resources such as compute, storage and communication services (e.g. include Amazon EC2, Rackspace, Google Compute Engine etc.)

☐ PaaS provides services such as complete operating system, software packages for application development and deployment on-demand (e.g. Windows Azure, Force.com, Google App Engine etc.)

☐ SaaS services include Salesforce CRM, Google Apps (like Google Docs and Spreadsheets), Microsoft Office 365, Cisco WebEx etc.

Other (please specify)

[   ]

*17. Which of the following cloud types has your organization adopted?

☐ Private cloud (internally owned and operated solely for a particular organization)

☐ Public cloud (accessible over the Internet, operated and managed by a third-party cloud vendor)

☐ Hybrid cloud (combination of private and public cloud to permit data and application portability)

☐ Community cloud (shared among several organizations with similar concerns relating to policy, compliance etc.)

Other (please specify)

[   ]

*18. Did your organization negotiate a cloud service contract/service level agreement (SLA) rather than accepting the cloud provider's standard terms of service?

○ Yes   ○ No   ○ Not sure

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✱19. Does your organization have an exit strategy (i.e. a strategy to exit from one cloud provider to another or back in-house) upon termination of cloud service contract?

○ Yes there is an exit strategy in case of contract termination

○ Yes, but there are no agreed ownership rights of all data that will be stored in the cloud

○ Don't know

○ No

Other (please specify)

[   ]

✱20. To the best of your knowledge, when negotiating with a cloud service provider which of the following agreements should be included in the contract/SLA? (Please check all that apply)

☐ Quality of Service (QoS) guarantee (service availability; uptime & downtime)

☐ Security (network and physical security requirements)

☐ Intellectual Property (IP) rights

☐ Data Protection (data and metadata ownership, security, location of data, E-discovery, backup and recovery etc.)

☐ Laws and Jurisdiction (regulatory and legal compliance)

☐ Warranties & Indemnities

☐ Exclusions and limitations of liability (for data outages and data loss)

☐ Transition out (data export functionality)

☐ Contract termination (retention and destruction of data)

Other (please specify)

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*21. Which one of the following applications are currently using cloud services in your organization?

	Already adopted cloud	Considered moving to cloud	Do not intend to adopt cloud
Desktop & Office software	○	○	○
Email & Messaging	○	○	○
BPM - Business Process Management	○	○	○
ERP / Enterprise management	○	○	○
CRM / Customer management	○	○	○
Accounting and finance	○	○	○
Application development platform	○	○	○
Disaster recovery applications	○	○	○
Business Intelligence (BI)	○	○	○
Content Management Systems (CMS)	○	○	○

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*22. The following are some of the unfavorable outcomes (or risks) of vendor lock-in in cloud computing. How critical are each one of these risks to your organisation's business operation and processes. Please rate each risk using a scale of 0-3, with 3 being the highest (n.b. a choice is needed for all options).

	(0) Not critical	(1) Low	(2) Moderate	(3) Critical
Having my data locked-in to one cloud provider	○	○	○	○
Data breach and cyber attack	○	○	○	○
Costly data migration or data conversion	○	○	○	○
Failure to provide agreed service/meet service levels	○	○	○	○
The lack of integration between various cloud networks	○	○	○	○
Unexpected application re-engineering or business process change	○	○	○	○
Processing incompatibility and conflicts causing disruption of service	○	○	○	○
Inability to easily move data and applications in/out of cloud environments	○	○	○	○

*23. How likely do you consider using a cloud-based Vendor Risk Management solution if such a strategy allowed your business to understand and manage vendor lock-in risks and compliance requirements effectively?

○ Extremely likely

○ Quite likely

○ Moderately likely

○ Slightly likely

○ Not at all likely

Other (please specify)

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*24. To the best of your knowledge, what skills should be in place for proper cloud computing services implementation and migration?

☐ Information security analyst skills

☐ Integration specialist and cloud architects

☐ Network administration and engineering skills

☐ Virtualization skills

☐ Project management skills

☐ Contract and vendor negotiation skills

☐ Good understanding of data protection laws and regulation

☐ Knowledge in the legal, compliance, security and risk management issues in cloud computing

☐ Enhanced technical knowledge and understanding of cloud computing

☐ Need for more specialised set of skills

☐ Not sure

Other (please specify)

[   ]

Cloud Computing Security and Data Privacy Risk Assessment

*25. To what extent does geographical location matter in regard to where your organization data is stored?

○ Location completely matters

○ Location matters somewhat

○ Location does not matter at all

○ Don't know

Other (please specify)

[   ]

*26. How concerned, if at all, are you about the <u>security</u> of your organization data in cloud storage?

○ Very concerned

○ Fairly concerned

○ Not very concerned

○ Not at all concerned

○ Don't know

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✱27. Using a scale of 1 to 5, with 5 being the highest. Please rate the following options in order of where you believe your organisation data would be safest (n.b. a choice is needed for all options).

	(1) Poor	(2) Fair	(3) Good	(4) Very Good	(5) Excellent
With a cloud provider located in the UK	○	○	○	○	○
They don't have to be located in the UK, but have to be in Europe (EEA)	○	○	○	○	○
On your own hardware in a shared data center (colocation)	○	○	○	○	○
A cloud run by a company with reputation of trustworthiness	○	○	○	○	○
On your own hardware with your own facilities	○	○	○	○	○
They can be located anywhere in the world	○	○	○	○	○

✱28. Thank you for taking the time and effort to complete this survey. Would you like to receive a copy of the research results/findings?

○ Yes

○ No

If you answered yes, please enter contact details (e.g. email, phone, etc).

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