Identifying Organizational Capabilities for the Enterprise-Wide Usage of Cloud Computing

BACKGROUND
Cloud Computing (CC) is a computing paradigm which currently receives a lot of attention. Especially the Public Cloud model promises several benefits such as faster time to market, no up-front investments, resource scalability, and lowered IT barriers to innovation [1, 2]. However, most firms hesitate to adopt (public) CC due to concerns about security, performance and reliability risks, regulatory problems, control, or vendor lock-in [1]. Current research mainly addresses the benefits and challenges for adopting CC [3, 4]. Little is known how firms can bridge the gap between inherent risks and the exploitation of benefits of CC. It is assumed that CC demands cloud-specific IT capabilities [2, 4].

CLOUD COMPUTING (CC)
An IT deployment model for utilizing IT resources as services over the internet from an external provider, that can be provisioned dynamically on-demand [5, 6, 7]. This research focuses on the Public Cloud model, including Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), and Infrastructure-as-a-Service (IaaS) [5, 6]. The Public Cloud Model differs from traditional IT outsourcing (ITC) in terms of (1) standardization (services, contracts), (2) automation (self-management), and (3) flexibility (elasticity, contract duration/volume) [5, 6, 8].

REFINED RESEARCH MODEL

IT CAPABILITY
A firm’s “ability to mobilize and deploy IT-based resources in combination with copresent resources and other capabilities” [9, p. 171]. IT capabilities and their underlying resources can be classified into technological (flexible IT infrastructure), human (technical knowledge/skills, managerial skills, IT/ business experience), and organizational dimensions (e.g. internal relationships, culture) [10, 11, 12]. Traditional IT outsourcing capabilities emphasize contract negotiation skills and informal relationship factors, which are not fully suitable in the public CC context [13, 14].

REFINING RESEARCH QUESTION
Which IT capabilities are critical for deployment and usage of CC services (Enterprise, Cloud) of public cloud models?

RESEARCH METHOD
Quantitative study among medium-sized firms in the IT-C sector in Germany with a focus on IT and information services. 520 firms were invited to our survey and 80 complete data sets were collected (response rate of 15%). The data analysis is based on Structural Equation Modeling using SmartPLS [15].

PRELIMINARY RESULTS AND DISCUSSION

INFLEX → USE
Contrary to our expectations, IT Infrastructure Flexibility shows a negative relationship with CC-Usage. Results indicate that firms tend to adopt CC particularly in order to compensate IT infrastructure weaknesses.

TECH → USE
Results indicate that technical knowledge and integration skills are needed to use and deploy CC resources in firms.

CCEA → USE
The ability to plan, design and implement IT systems with CC resources shows no significant relationship with CC Usage.

CCMAN → USE
Contrary to our assumptions, results indicate that the ability to select and manage cloud providers has no significant relationship with CC Usage.

INNO → USE
The ability to proactively search for new ways to leverage CC resources ability has no significant relationship with CC Usage.

COMM → USE
There is a significant relationship between Top Management commitment and CC Usage. Results indicate that these firms consider CC resources to achieve added value and/or competitive advantage.

SAMPLE DEMOGRAPHICS (N = 80)

Firm size: 76 % 50 - 250 employees 15 % 251 - 500 employees 9 % Other
Turnover: 61 % < 15 Mio. EUR 16 % 15 Mio. EUR 11 % > 50 Mio. EUR 13 % N/A

Sector: 74 % Information and Communication 36 % Other

Top-down injected organizational adherence to CC initiatives expressed through connectivity, compatibility and modularity

Further Information

References