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Improving Student Retention in UK Higher Education Institutions; The potential of using Knowledge as a Service (KaaS)

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IMPROVING STUDENT RETENTION IN UK HIGHER EDUCATION INSTITUTIONS;
THE POTENTIAL OF USING KNOWLEDGE AS A SERVICE (KaaS)

University of **HUDDERSFIELD**

INTRODUCTION

- Higher Education (HE) is characterized by the tension between the offered quality and the drive to provide affordable higher education to more and more people.
- Information Technology (IT) has an increasing role on that. Specifically, Knowledge as a Service (KaaS) is an emerging concept which integrates knowledge organisation, knowledge markets and knowledge management.
- **KaaS** is a system that provides content based information, knowledge and data as organisational outputs such as answers, facilitation, advice etc. These outputs are meant to satisfy a user's or a person's needs. KaaS is delivered via knowledge markets as a Cloud Computing environment.
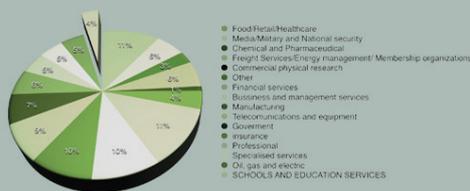

Figure 1: Cloud Computing Usage (Gartner, 2009)

LITERATURE REVIEW

- Cloud Computing is an emerging internet-based technology which delivers on-demand IT services to users on pay as you go basis, similarly to other utilities such as electricity, water etc.
- The Cloud Computing definition that most scholars agree with is the "U. S." National Institute of Standards and Technology (NIST) 2009 definition which defines Cloud Computing as: "a kind of application pattern that integrates distributed and scalable resources, such as storage, calculate resources and bandwidth resources, and build-up an uniform managed, automatically deployed and efficiently scheduled, elastic resource pool, and deliver the IT resources, platform and applications to the customers on Internet demand".

Gartner's survey results show that Cloud Computing is being used mainly in business and finance sectors rather than education (see Figure 1), however it also shows that proportionally there is significant potential growth for Cloud Computing within Higher Education.

Cloud Computing Services

There are three service models that are used to provide Cloud Computing services to the consumers. The three service models are Software as a Service, Platform as a Service and Software as a Service (as seen on Figure 2).
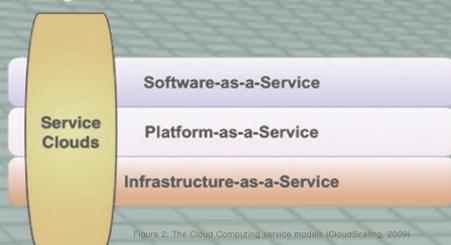

Figure 2: The Cloud Computing service models (CloudScaling, 2009)

Knowledge as a Service (KaaS)

- KaaS is a correspondent service to Cloud Computing models and a new concept in the education field that was firstly introduced in Japan in 2009. KaaS is a new research field and with the rapid development of Cloud Computing and Knowledge Management, knowledge service has been integrated as resources based on collaboration. The outcome of such collaboration and integration is users who can exchange and share knowledge. development of Cloud Computing and Knowledge Management, knowledge service has been integrated as resources based on collaboration. The outcome of such collaboration and integration is users who can exchange and share knowledge.

Advantages & Disadvantages of Cloud Computing technology

Advantages:
- Reduced Cost,
- Mobile Accessibility,
- Scalability (Increase/Decrease Storage),
- Environmentally Friendly

Disadvantages:
- Security & Privacy,
- Lack of StaVndards,
- Compatibility/Migration

Cloud Computing in UK Higher Education institutions

- In February **2011** HEFCE and JISC (the Joint Information Systems Committee) announced a £12.5 million fund to support the delivery of cloud-based services for UK research and education.
- In **2012**, Curtis and Cartwright published a cost analysis of cloud computing research on behalf of JISC and EPSRC (the Engineering and Physical Sciences Research Council). The result was a report targeting anyone in the HE community with a particular interest in Cloud Computing.
- In **2013**, JISC signed a new strategic alliance with JANET and Microsoft. The new arrangements offer improved: access to applications and infrastructure services like research projects, websites and virtual learning environments.

KaaS Benefits for UK Higher Education

- **Centralised Data Storage**: Applications and data are stored in the cloud so, a new student or staff member can be connected fast and easy.
- **Improved interoperability**: It is difficult for fraud people to steal sensitive data such as results, exam questions, tests etc.
- **Data access monitoring** is easier as only one place should be supervised, not all university's computers.
- **Virtualisation**: Rapid replacement of a compromised cloud located server is possible without major damages or costs.

FRAMEWORK

Conversational Framework has four characteristics:
- Discursive,
- Adaptive,
- Interactive and
- Reflective

Evaluation Criteria (Themes) on which the questionnaire has been based on is:
- Demographic questions
- Functionality / Technical Issues
- Description of the system currently in use
- Level of Integration
- Usability / E – Learning Activities

Conversational Framework Implementation
ENVIRONMENT -> FRAMEWORK -> THEMES -> RESEARCH QUESTIONS -> ANSWERING THE QUESTIONS

RESEARCH METHODOLOGY

Research approach & philosophy:
- Deductive research approach (top – down approach)
- The philosophical approach is considered as positivism (or more accurately hypothetico – deductionism).

Research methodology used:
- Quantitative research methodology

Research method tools used:
- Online - Survey
- Focus Groups
- Interviews

MAIN RESEARCH FOCUS

- The **aim** of the current research is: **Improving student retention in UK HEIs and looking at the benefits of using KaaS in order to improve student retention management.**
- The **Case Study** includes **Data Collection** via surveying Computing & Engineering 1st Year students from the University of Huddersfield and other UK HEIs. The **Data Analysis** will compare the survey results against the following List of Factors.
- Age
- Gender
- Entry tariff
- Ethnicity
- Disability
- Attendance Monitoring
- Entry qualification type
- Accommodation Type
- Social Class
- Parental Education
- UniLearn Activity
- Awareness of University Support Services
- Sense of Belonging and Engagement
- Interaction with Personal Tutors study location (home/not home)

Expected Research Outcome: An acceptance model that is going to work as an early warning system for student retention in UK HEIs.

Questions that the current research is about to answer is:
- Which are the students' needs?
- How knowledge is shared/distributed within a University's Department? (Mapping of knowledge flow).
- Which are the main reasons for low student retention?
- Which are the KaaS main advantages and disadvantages?
- And, how KaaS, a Cloud Computing service, could help on improving student retention?

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