

Study of early adopters of shared services and cloud computing - 'FEAST'

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**Maintaining a sustainable Future
for IT in Higher Education**

- HE Associates:
 - A collection of former senior University officers doing things that interest them on a commercial basis
- The FEAST report
 - Relevant to all HE/FE internationally
 - Considers the justification for institutions to be more agile
 - Proposes rapid adoption of Shared Services, Cloud Computing and new technologies as routes towards agility
 - Google “JISC FSD FEAST” for more information on the project
- I cannot do justice to a 300+ page resource in the time available
 - <http://www.jisc.ac.uk/media/documents/programmes/flexibleservicedelivery/Feast%20Final%20Report%20May2011.pdf>
 - Or <http://tiny.cc/fw69b>

- HE is just too expensive for most economies
 - Especially as an increasing % of the population attend universities
- In the end the customer pays! (loans/taxation....)
- Administrative overheads must be lowered
 - More emphasis on the front-facing services
- Why compete on services that add little competitive advantage?
- The transformation of the IT environment requires greater agility
 - in T&L/Research/Administrative services
- Not forgetting:
 - a new type of competitor (the 'with-profits')

- Government believe that efficiencies in back-office will come through sharing and pooling and potentially from outsourcing:
 - shared services "can make a sizeable contribution to making UK universities more competitive in the future and allow for the utilisation of savings in support of teaching and research";
- outsourcing: the report claims that £2.7bn could potentially be saved annually by the HE sector if the provision of certain non-core services was transferred

- The UK has an excellent history of sharing in respect to IT/IS activities and others:
 - purchasing consortia, staff development activities, student recruitment with UCAS,
 - The JISC information services and infrastructure examples such as the JANET network are world-leading!

- However, the sector historically has been established to compete rather than collaborate!
 - Does this make sense particularly now that cost and locality are becoming key?



- The FEAST study is deliberately high level as it is targeted at senior Managers
 - Governors/Principals & VPs/Executive Management
 - Intended as a resource to be utilised rather than a stand-alone report
 - Institutional mediators would utilise key components for their own purpose
- Institutions are generally not ready for (or even aware of) the agility required to support new technological and service cultures
 - **agility** is a key term as it expresses the degree of urgency that will be inevitable
- The report is about so much more than cloud and shared services



- You would expect the Back-office would be disproportionately expensive in small institutions
 - So why do many premier institutions spend so much?
 - And yet deliver little more
- Evidence of expenditure v benefit is weak
- Expenditure is often based on legacy, not on cost justification!
- Many institutions do not cost the elements of their back-offices

- The full report is concerned with emerging technologies and paradigms with a particular focus on innovation to support flexible service delivery
 - the whole new paradigms of shared services, enterprise architectures and cloud computing.
- The report is written as an overview of technologies
 - with emphasis on examples from the sector and other industries both nationally and globally.
- There are major case studies
 - with particular relevance to activities being considered within the sector
- and Vignettes (mini-case examples) to give breadth and depth.

Slide with major case studies

■ Case studies list

University of Canberra
An Cheim
King's College London
SOA ESB
RCUK

Process outsourcing of all admin processes
Common application systems across HEIs
Major outsourcing of IT components
Several ESB/SOA projects
Shared Services Centre – Research Councils

■ Vignettes approach

UK HE Vignettes
Non-UK HE Vignettes
UK Non-HE Vignettes

30 examples from UK HE sector
30 examples from HE in other countries
15 examples from other UK public sectors

- Rapid transformation (economic and social) and emerging competition require institutions to learn agility!

- To be anticipated:
 - Greater efficiencies in all aspects of operations
 - We will need to be as good as other 'e-based' service providers!
 - Improved student and staff user experience
 - Improved access / exploitation of corporate and student data
 - Enhanced institutional agility and responsiveness:
 - new paradigms of customer engagement
 - new technologies embraced by users led by consumer market activities

- Agility within a single institution will not be enough;
 - increased efficiency and end-user support will demand new approaches including shared services, commercial partnerships, and outsourcing.

- The FEAST report provides a very high-level overview of the key architectures and policies which must be considered immediately.

- The Cloud & Shared Services utilising
 - SOA, ESBs, etc.

- Experience in the sector as a customer or partner of shared services is not high;
 - few institutions have in depth experience of being a **service provider** to others and internal staff or governance may not readily adapt to the necessary cultures and requirements of being a service provider where accountabilities are significantly different.
- **Adopting external services** from a provider similarly requires a different culture with in-house staff needing to acquire skills in contract negotiation and management and also skills to liaise between the provider and end-users.
- At the heart of shared services is the need for a clear and pragmatic governance model.



- Institutions should be absolutely clear about what services should be provided internally because they give a significant competitive advantage
 - services not on this list should be considered on merit and potential as candidates for sharing or outsourcing.
 - Institutions cannot just wait to be customers;
 - shared services require active engagement by the partners determined by the governance established for the shared service;
 - hence, a pro-active approach is required.

However, be real!

- A rich shared service environment must embrace a more commercial approach requiring repurposed governance models supported by business plans demonstrating sustainability.
 - top-slicing is desirable as a mechanism to develop pilot services
 - however sustainability and governance must be centric to any proposal
- The report discusses models of shared service:
 - top-down v bottom-up; models of sharing based on various groupings including geography or peer groupings, or on operating models based on who does it.
- Bottom-up will often deliver the innovation from the grass-roots close to the end-user requirement.

- The cloud is sadly hyped so that it is all things to all ‘men’:
 - however, there is clear evidence that the basic direction of the paradigm is going to produce transformation rather than just change.
- The cloud is now pervasive for student email etc...
 - The ROI is high; few standards (except service suppliers de facto) exist in the cloud so beware that lock-in can readily be created
- The Cloud is generally not for beginners
 - considerable experience with virtualisation is required before entry
 - security in the cloud for certain services is a key issue particularly where personal data may be located off-site.

- Commercial suppliers are not charities, they need to be profitable
 - Need careful consideration of all risks
 - offers a layered approach
 - access to infrastructure, applications, services and now business processes.
 - The skills for utilisation of each layer are different and impact upon different user communities and skill sets within the institution.
- Cloud computing is an enabler for the efficient use of resources and facilitates a route for managing capital and support costs.
 - However, Cloud computing is not about technology, it's about process and the business model.
 - Adoption of the Cloud requires a degree of maturity by both the institution and its IT staff; it is not an-all-or-nothing paradigm; it is possible to enter gradually and appropriately.

The big opportunity

- The back-office administrative systems, services, procedures, and all related areas possibly including supporting staff.
 - To date it has not been in interests of suppliers to break the UK model because much money is derived from tailoring, customisation and all the consequent on-going annual support.
- The emerging 'private' HE providers will challenge particularly with regard to back-office efficiency and hence cost to the student.
- Some countries and US states establish 'national' services to deliver core functionalities
 - The UK did head in this path once before (in the early 1990s)!



Reconsidering the Silo model

- Administrative systems are operated in silos
 - staffing and processes operated by independent divisions of staff.
- the IT systems the only common element
 - operated by a common centralised IT staff with prerequisite expertise
 - no wonder many users complain of the need to re-enter common data on multiple systems.
 - The lack of integration increases cost inefficiencies and risk
- The silos must be joined up by a CIO like role divorced from day to day IT/IS management.
- The key responsibility should be to ensure the Enterprise Architecture is aligned to the business requirements and designed to support agility and transformation of the sector.



- Technological change is exponential in pace and occasionally disruptive events can appear unexpectedly.
- Political outcomes can transform the horizon as with in the UK with the student as the paying customer and the emergence of private providers.
- Changes in users expectations from technologies and service providers will need to be mirrored in our own delivery models. (efficient data handling, easy access to resources and as a communication tool to all parts of the institutional process, CRM for tracking, etc)

Strategic Alignment

- The IT/IS environment are crucial to every part of an institutions operation
- Strategic alignment and agility must be led at Board level
- The CIO role in some title or another is crucial

Dis/Economies of Scale

- Economies and diseconomies of scale are fairly intuitively understood
 - however, right-sizing can be a significant issue.
- Issues
 - Services growth can compromise the quality basis of establishment
 - Governance must facilitate new and departing customers
 - Over-diversification is a protective measure against future downturns which can lead to loss of focus
 - Over-promising is a serious downfall.
 - Key is sustainability with anticipated failures.

Systems Architectures-1

- Institutions spend significant percentages of their budget servicing non-core activities including the administrative support for that core.
- Little competitive advantage is achieved from many of the non-core activities but if these are undertaken poorly then it will be very evident to the end-user.
- Best of breed and point-to-point integrations are expensive to support and systems have replicated functionalities to be managed. Disproportionate cost can result in supporting little used functionalities.



Systems Architectures-2

- Would vanilla systems represent better value with institutions adopting the processes best required by their application suites rather than localisation?
- Just how feasible are 'out of the box' systems?
- Administrative systems as a service demonstrated to work here in Ireland: An Chéim
- Suppliers are resistant of cloud based services-oriented administrative services whilst the current market approach is so lucrative; however, the sector could take measures to instigate action towards this approach.



Adopting Agile Technologies

- IT staff should be supported and encouraged to embrace more agile approaches to technology and services provision
- Virtualisation wherever possible is crucial
- Note key issue is enthusiasm to embrace the new but reluctance to radically change systems which have had previous high levels of intellectual capital
- Business requirements must drive the investment and staff should traverse the (business) gap between systems and services delivery.
- Technical staff must fully understand the business dimension and end-user perspective and business managers appreciate what technology could deliver for them and the cost of so choosing.

- Cloud computing is much more than a technology
- It is rather more a paradigm of approach requiring maturity from the path of virtualisation.
- However, the hype at this time is considerably larger than the reality. Institutions should assess their own competencies and maturity with regard to the emerging cloud paradigm.
- Institutions should build skills in cloud-related technologies perhaps by instigating a private cloud and then experimenting with augmenting their capabilities through a hybrid cloud approach.



- A full understanding of the costings surrounding all business process activities is highly desirable
- The 80-20 rule should be carefully considered
 - it is very easy to spend disproportionate effort supporting activities and processes that are rarely executed.
- The new paradigms require staff to learn new skills.
 - Time must be provided for this and suitable projects without critical constraints should be utilised to develop these new skills.

- There is widespread expectation in the IT media that the headcount associated with IT support will be reduced as a consequence of emerging technologies and the commoditisation of services.
 - In an increasingly shared and service-oriented environment, the institutional skills to support tendering, contracts development and services supply management will need to be developed.

- Legal support is very expensive; within the community
 - institutions should seek best practice from early adopters with regard to contractual arrangements regarding service contracts
 - a model for early adopters to financially benefit from sharing their experience would be desirable and pilot funding of activities should be undertaken so that the sector lessons can be made freely available in the community
 - Institutions should be cautious of potential lock-ins to vendor technologies which might alienate end-users selecting 'rival' supplier technologies or interfaces.

- Services procured from external providers (commercial or shared services) must be delivered against a contractual commitment and service level agreement. Skills necessary to procure services, manage services supply, and operate through change management procedures are very different for most relevant key staff groups. The transition to outsourced services is not without its difficulties and certainly will not be accomplished at a stroke. The process requires significant change management capabilities within the institution concerned and must be carefully managed to ensure that internal key competencies to support the transition are maintained for the necessary period.

- IT services staff do not have extensive experience of IT services procurement of the type envisaged to support institutional outsourcing of administrative systems, services, or processes
- The sector has many examples of poor service contracts
 - Institutions adopting a contractual partnership for any bespoke software development should institute a formal project management approach (possibly with consultancy providing appropriate supporting skills) aimed towards establishing workable contracts with timetables and clarified responsibilities for both parties, and potentially financial penalties. A change management procedure must be clearly defined and operated throughout the project lifetime.

- Services procurement must recognise the impacts potentially arising from new technologies or end-user demand; the mechanisms for services revision must be formally contracted to allow services demise, services refresh, services dimension changes, etc. In particular services should be procured unbundled so that individual components can be considered in isolation. Essential in all Services procurement is planning for eventualities potentially unforeseeable.

Building Sector Shared Services-1

- JANET as a service was initiated as a bottom-up service between a few research-intensive HEIs but then transformed to be a top-down sector-wide service.
- Sector-initiated bottom-up services find migration towards top-down and commercially focussed services extremely difficult.
- Instigating top-down services within the sector can have the same difficulties unless the scale is small and the scope is well-defined.
- Institutions generally do not encourage IT/IS services staff in these entrepreneurial activities



Building Sector Shared Services-2

- If shared services are to be instigated within the sector, they will need a supporting agency/body that can examine the proposal on the same basis that might be applied to a start-up or spin-off company. The particular issues of business planning, costing, and sustainability must be addressed and the risks/benefits analysis be widely tested amongst the community of potential customers.
- A supporting body should be encouraged to develop a model for and enable closer partnerships between the sector and commercial service providers to facilitate the requested development of sector-specific or tailored shared services.

- The sector is gaining experience with SOA and through pilots nationally and local implementations; confidence has significantly increased that the paradigm has rich offerings to the sectors requirements. It has been demonstrated that it can be used for both institutional data integration and as a tool for sharing data across diverse administrative systems.
- SOA is gaining maturity and standards are demonstrating inter-connectivity. Suppliers are beginning to see its potential within the sector and could be encouraged through some well-directed sector activities and initiatives.

- The FSD program recognises the urgency of adopting **agility** which will service the rapid change environment.
- The FEAST project has selected many case studies particular relevance to the sector at this time
- The message is that the pace of change is being driven by an accelerating provision of technologies and end-user expectations. New paradigms are rapidly gaining maturity and institutions should prepare for adoption of many.

- Shared services offer savings and operational improvements across a breadth of service types; the obstacles are generally not technical!
- The autonomy of UK HE institutions has prevented moves towards centrally provided IT services. The failure of the MAC initiative to deliver common management systems still casts a shadow.
- Application Suppliers make significant profits from the current model where systems are heavily tailored into existing environments.
- However, new paradigms of enterprise architectures and SOA may drive new delivery models – especially if private institutions are adopting this approach.

