University of Glasgow

Final Report: Vision for Student Services

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1.0 Executive Summary

1.1 Introduction

This is the final report on a vision for student services for the University of Glasgow.

The balance of this section presents an Executive Summary of the report's findings and recommendations. Thereafter in Part 1:

- Section 2 evaluates current levels of performance and system capabilities, including what the university is seeking to achieve with its business strategy. It also briefly examines the driving forces behind changes being made by leading peer group institutions to enhance student service delivery and the key drivers for their investment in student MIS. This is the 'Status Quo and Aspirations'.

And in Part 2:

- Section 3 considers the key features of what student services must be capable of delivering in the future if aspirations are to be met and competitive advantage secured. This is the 'Vision' and incorporates both a statement of objectives, prospective indicators of success and a detailed description of what the student's experience of the future might comprise.
- Section 4 examines the actions that will be required to deliver the Vision. This is the 'Strategy', incorporating a roadmap for action. Again it briefly considers the approaches being adopted by other HEIs and whether these offer useful insights for the university.
- Section 5 offers a brief commentary on the UK student system supplier market including the experiences of other HEIs and some preliminary cost scenarios. This is 'Off-the-shelf systems'.
- Section 6 summarises the recommendations for action arising from this review.

Appendices provide further details on the methodology adopted by the review, consultees and such supplementary information that is referenced in the main body of the report.

1.2 Current Approach

The university has developed its present student system by means of in-house development supplemented by the targeted use of 'best of breed' off-the-shelf systems.

Oversight and development tasking is provided by a Steering Group (entitled SRIP) the membership of which is drawn from across the University.[1]

To date the institution's approach to system development has been inherently tactical with day-to-day (operational) needs of the user community being addressed through evolutionary developments in system functionality. In the past this has succeeded in meeting most routine requirements.

[1] SRIP: Student Records Improvement Programme. Membership of which comprises Programme Convener Jan Hulme, Academic Secretary, Programme Director Christine Lowther, Head of Registry, Programme Manager Frank Lynch, Head of Operations/Deputy Head of Planning Services, Professor Ailsa Campbell, Assistant Chief Adviser of Studies, Faculty of Biomedical & Life Sciences, Professor Jim Conroy, Dean of Education, Professor Ian Ford, Faculty of Information & Mathematical Sciences, Khosrow Hejazian, Director of Management Information Services, Dr Iain Logan, Deputy Director of Computing Service, Sandy Macdonald, Director of IT Services, Professor Andrea Nolan, Vice Principal Learning and Teaching, Shona Morrison, Students' Representative Council President and Matthew Hastings (Clerk)

However the university now requires major enhancements in system functionality and sophistication.

These enhancements are required to deliver key elements of its business strategy including:

- Significantly increased recruitment of PGT, PGR and overseas students.
- The improved use of business and market intelligence.
- Improved undergraduate recruitment from regions other than the West of Scotland.
- Significantly improved retention of undergraduates.
- More efficient and effective administrative support for academic staff.

The present approach is manifestly ill-equipped to satisfy these needs.

Critically, there is at present no formal mechanism for directing business process improvement upon which sustainable systems development and deployment can take place.

As a consequence the university is now progressively falling behind its domestic and international competitors in respect of:

- The efficiency and effectiveness of its student administrative processes.
- Its ability to access, process and analyse key data for the purposes of informing recruitment and marketing activities.
- The relative flexibility, modernity and capability of its student management information systems.
- The consequent quality of the student experience both before and during their time of study with the university.
- Overall competitive advantage.

Peer group HEIs are for the most part already embarking upon major process improvement initiatives and investing in web-enabled student MIS. [2]

They are also often, though with varying degrees of 'success', tackling the connected challenges of modularisation and semesterisation with the establishment of new academic and assessment regulatory frameworks.

The status quo is evidently a source of frustration to both academic and administrative staff. It is also serving to unhelpfully embed inefficient administration because:

[2] The term 'web enabled' refers to the ability for a system to connect to, or be run on the web. However, in reality this is a much broader term that may refer to various interpretations of the nature of the interaction with the web. In the context of student information systems the term tends to mean one of two things. A system can be fully web native so that no further software other than the core application software is required to operate the system via the web; and no software is required on external PCs to access the system other than an appropriate web browser.

Alternatively, a system may become web enabled through the addition of software to non-web native application software so making it web-enabled. This again has two models: one whereby the web-enabling software results in a system that can be fully accessed via the web using just a browser; and one where a proportion of the functionality can be accessed by the web (such as 24/7 self service functionality) but with a proportion that cannot be accessed in this way – so resulting in the potential need for software to be held on certain PCs that provides access to the appropriate application software depending upon the functionality required. This means that certain aspects of functionality may not be accessible remotely unless access to the University network is possible and the user has the appropriate software installed on their PC.

As well as the different implementation requirements of these models, another consideration is that, as a rule, there tends to be a need for lower specification PCs and less local support required for browser based applications.

- Custom and practice in both academic and administrative process management has gone largely unchallenged with little evidence of cross-university improvement initiatives. Key student administrative processes are in the views of many consultees increasingly ill-adapted to delivering the institution's strategic objectives.
- Student system users have become conditioned to receiving a service that is both highly configured and localised to support existing processes. As a result administrative innovation is inadequately stimulated by developments elsewhere in the HE sector. Most importantly, they often lack the key feature of being 'student-centric' in design.

1.3 The Case for Change

Consultees contributing to this review are clear that there is an overwhelming case for a renaissance in the present approach to process management and student system development.

Drivers for this include (but are not limited to):

- The increasingly volatile landscape in UK HE, be it for the future recruitment of domestic undergraduates from a smaller demographic base in the West of Scotland or the challenges of attracting international students in an increasingly commoditised and competitive environment. This demands a more sophisticated approach to recruitment, the targeting and management of relationships with prospective students and more swift and responsive communications. Above all it demands a much more 'student-centric' philosophy to be adopted and deployed both in terms of academic and administrative ethos and the operation of processes and systems.[3]
- The challenge of delivering a 100% increase in PGT and PGR students when many other HEIs are also seeking to achieve similar growth. Consultees are clear that key recruitment processes offer many opportunities for improvement that if secured will greatly facilitate achieving the target increase.
- Major improvements being required in Glasgow's present undergraduate retention demanding both process improvement in relationship management but also more effective reporting and tracking systems.
- Glasgow's peers (as already noted) 'raising their games' in response to the common environmental factors. We are aware of many research intensive HEIs in the UK embarking upon root and branch reforms of student administration and the systems used to enable its delivery. These institutions face the same challenges as Glasgow albeit necessarily applied to their own unique context. Whilst 'keeping up with the Joneses' is hardly a case for major investment or business change, major enhancements in a peer's capabilities that will likely erode Glasgow's own competitive advantage represents just cause for action.

[3] Such a philosophy is consistent with the aims of the university's strategic plan, the principles underpinning the 'Hub' development, the university's emerging Learning and Teaching Strategy and the approach being taken to the development of a new Portal.

1.4 Vision

The vision expounded by consultees is clear, it is to:

'To put the student first' by delivering an outstanding experience enabled by:

- *Learner-centric processes.*
- *Modern technology.*
- *A culture of continuous improvement that leads international best practice.*

Nothing less is acceptable for a university aiming to be judged as being within the top 50 of its peers internationally, and the top 10 domestically.

It must facilitate delivery of this experience through the deployment of web-based administrative services that support transaction and relationship management 24/7 anywhere in the world; the 'martini' [4] concept applied in practice.

Face-to-face contact and personal relationship management will remain guiding tenets of Glasgow's approach to student relationship management. But routine administrative processes must be enabled by a modern, flexible and adaptive self-service environment.

The university in the future will be able to judge the realisation of its vision by whether it has:

- Contributed to the achievement by the university of its business strategy, as evidenced by:
    1. Increasing the number of International students.
    2. Increasing the number of Postgraduate headcount.
    3. Increasing the % of 'Home' Undergraduate students having an international experience.
    4. Improving Retention.
    5. Improving the university's completion rate to that of its Russell Group comparators.
    6. Improving Entry standards.
- Learner-centric processes that are flexible and designed to meet the needs of a heterogeneous learning community as evidenced by its responsiveness to demand for new programmes and its ability to attract and retain a diverse learning community.
- Technology enabled process administration that has consigned routine / cyclical tasks to automated transactions and web-based self-service, as evidenced by the proportion of students who successfully apply, enrol and select modules / electives online.
- Greatly enhanced the use of business and market intelligence to inform recruitment activities as evidenced by the availability and use of relevant management information.
- Developed all relevant staff to make the full use of modern systems as evidenced by levels of usage, and the investment made in training.

[4] 'Any time, anywhere'

- A culture of continuous improvement that is lauded, resourced and encouraged to flourish as evidenced by the extent of process improvement activity taking place.

1.5 Strategy

To achieve this vision the university's strategy must encompass a major programme of institutional change:

Process improvement and cultural change

The university must engage in a thorough programme of business process analysis, re-engineering and improvement. A programme executive (or equivalent) must be established with very senior sponsorship to supervise and drive a comprehensive programme that should be initiated as soon as practicable. The sponsor should be a very senior academic.

No suitable governance structure for such a programme presently exists, therefore it must be established from first principles.[5] The product of this analysis must drive the formation of a process change programme, necessary restructuring of student administrative functions, academic processes, staff development and the specification of functional requirements for student MIS.

It may be tempting to consider that the processes that require improvement are solely administrative in character. In fact the processes that will be encompassed must necessarily include those that might be deemed partly or wholly academic in character (for example the process by which a new programme is established, approved and launched).

This will be a necessary component of the overall programme which will demand significant changes in Glasgow's organisational culture that will be challenging and difficult to achieve, but necessary to accomplish if the vision is to be realised.

System investment

It is our view that the present development strategy for student MIS cannot keep pace with business need and is no longer fit for purpose. The university needs to invest in a step-change in its student system capabilities. To meet the functional requirements sought by users (a few examples of which include; business and market intelligence, an enquiry handling and tracking capability, fully web-enabled self-service and the capability to devolve key user operations within Faculties etc), the university must seriously consider investing in a modern off-the-shelf student MIS. Continued dependency upon internally developed solutions as the mainstay of the student MIS will not suffice. Consultees' requirements represent reasonable needs that are supportable by modern technology and reflect the key functional developments Glasgow's peers and competitors are aiming to deploy over the next three years.

1.6 Possible Costs

In terms of setting a robust budget, further detailed work is required. However from our experience and knowledge of costs incurred by comparable HEIs, we would suggest that for planning purposes the university consider a provisional allocation of up to £10m over 5 years to resource the recommendations made in this review. This would encompass:

- New systems and implementation of same, up to £5m.
- Internal resourcing of process change and system implementation, up to £3m.

[5] OGC's MSP and PRINCE 2 have much to offer in this regard

- Increased operational costs in support of running more sophisticated systems, up to £2m in this period.

These figures are predicated on certain principal (and cautious) assumptions, including:

- The establishment of a full-time project team to drive both process analysis and system implementation.
- Full back-filling of internal posts during periods of secondment to the project with the costs incurred by the source department being funded by the project.
- The most sophisticated (and hence costly) SMIS being procured.

It is therefore a necessarily conservative forecast.

Nevertheless these are all preliminary estimates and further detailed work will be required to build a competent budget for the recommended programme of work.

1.7 Conclusion

This review is strategic in context and content. It provides an overview of a necessarily complex set of issues and elaborates both the necessary vision and the strategy necessary for its accomplishment. The balance of this report examines the issues presented in this summary in further detail and the next section specifically evaluates current levels of process and system performance.

PART 1

2.0 Status Quo and Aspirations

This section considers current levels of process performance and system capabilities, including the key challenges facing the university.

2.1 Overview

The existing Student Management Information System (SMIS) is recognised as a functional system and the product of a generally well-regarded project (SRIP) that has sought to meet the priority needs of the university.

The web-based support delivered by WebSurf provides functionality as good as the best presently in place in other UK HEIs. However the existing system is not a web-native product.[6]

It is also clear that the aspirations of those consulted include significant functional requirements that lie way beyond the capabilities of the current system to support, and for the most part do not appear within the scope of planned system enhancements. These include (but are not limited to) full web-based transactional support from the point of enquiry right through the key phases of the student administrative life cycle.

In our experience the university is presently committing significantly less resources to the development of its student systems in comparison with other leading Russell Group institutions. What has been achieved by the internal MIS team should be commended. But it is clear that a step change in system development will be necessary if the functional requirements of users are to be satisfied within a reasonable timeframe.

As important is the urgent need to establish an approach to business process review across all key student administrative areas. No investment in future technology should take place without such an analysis having been performed and it will be a critical precursor to delivering improved efficiency and effectiveness in the student experience.

2.2 Enquiry Handling

The university does not have any formalised or structured processes for enquiry handling beyond such procedures that may be operated by specific departments.

The use of technology is very limited and there is no institution-wide enquiry recording, tracking or customer relationship handling / management capability in place.

The absence of effective process management or underpinning technology is exacerbated by the limited availability of business and marketing intelligence to inform either domestic or overseas recruitment activities. That which is available comes from the Recruitment Admissions and Participation Service (RAPS) and International and Postgraduate Service (IPS). However, neither of these two offices has any formal responsibility for this function. Neither do they have the resources to perform it so the information that is available is necessarily very limited.

Such a function should enable:

- Policy making on recruitment activities by Departments / Faculties to be informed by market potential and an understanding of the prevailing demand.

[6] For the purpose of this report, our definition of this term is that for a system to be fully web native, no further software other than the core application software should be required to operate the system via the web; and no software should be required on external PCs to access the system other than an appropriate web browser.

- Departments / Faculties to be able to 'commission' and specify market focused analyses to inform recruitment planning.
- A sophisticated understanding of the approach being adopted by competitors both domestically and overseas.
- Investment to be directed into recruitment activities that are most likely to generate the greatest return of eligible students.
- (As a consequence) manifestly improved recruitment performance.

In our view the present arrangements are ill-designed to support the achievement of the university's very stretching Graduate student recruitment targets.

This represents a major deficiency that can only be satisfied through a combination of process design, organisational restructuring and system deployment.

The university has already (very logically) decided that should it acquire a CRM capability and that it should be through procuring a 3rd party product. This recognises the proliferation of viable 'off the shelf' systems on the market and the fact that in-house development in this context is simply unviable.

Business intelligence is also, of course, enabled by the core student record system. The university will in future seek to deliver such business intelligence as the student record can provide by means of a sophisticated reporting and analysis tool for which it plans to invite commercial tenders in early 2007 (two examples of leading tools on the market are at present COGNOS and SAS).

Our recommendations are that the university should:

- (R1) Review and develop a business and market intelligence function.
- (R2) Conduct a process review of student enquiry management processes.
- (R3) Specify functional requirements for a CRM / enquiry / relationship management system within any wider exercise for determining overall student MIS functional needs (and taking into account such work that is in train with regards to reporting and analytical tools).

2.3 Undergraduate administration

The forecast of demographic changes in the UK raises the spectre of a very more challenging undergraduate recruitment environment in the near future.[7]

We understand that Glasgow's long-term plans allow for a small reduction in undergraduate intake to offset the much increased recruitment of PGT and PGR students.

Nevertheless consultees for this review are clear that improvement in the overall performance of undergraduate student administration is a necessary priority.

[7] Demographic analysis suggesting that the current gradual increase in eligible school leavers likely to apply to UK HE will be followed after 2010-11 and to the end of that decade by a significant reduction (of up to 13%). See HEPI publication: Demand for HE to 2020 http://www.hepi.ac.uk/pubdetail.asp?ID=204&DOC=Reports. The West of Scotland is forecast to be more acutely affected than other parts of the UK and Glasgow's dependency upon local recruitment for its full time undergraduate intake (with some 46% hailing from within 30 miles of the campus) indicates the extent of the university's potential exposure.

This encompasses enquiry handling (as already discussed above) but also and in particular includes:

- Student tracking and such other processes that are designed to support improved retention.
- Extensive online self-service function for all key student administrative processes.

2.3.1 Student tracking

We have been told that present levels of retention are considered unsatisfactory and understand that a working group has been convened by the university to focus upon this issue. The reported 14%-16% loss of undergraduates compared to a Russell Group average of 4%-5% indicates the scale of the challenge.

A modern Student Management Information Systems (SMIS) can contribute (as part of a wider initiative) to improved levels of retention by enabling:

- Data capture pertaining to student attendance where this is recorded.
- The reporting of this data to those staff with responsibility for monitoring patterns of attendance so that the need for intervention can be considered.

At a more sophisticated level a modern SMIS can enable:

- Longitudinal analysis of the key characteristics of those students failing to complete their studies by reference to various relevant indicators such as financial status (e.g. are they a debtor to the university?), prior attainment, academic performance, and pertinent personal attributes.
- The presentation of reports using this data so the university may devise strategies and processes for student support that will target those most at risk of failing to complete.

2.3.2 Online self-service

Academics and administrators who contributed to this review are clear that they want full online access to relevant student records be it at an individual or aggregate level. It needs to be available remotely 24/7 anywhere in the world, enabled by a single shared database with a single unique student record (one version of the truth) with process management of the student record enabled at Faculty and Departmental level.

More specifically the capabilities that were identified by consultees include:

- For working with prospective students - full enquiry tracking and monitoring by means of a developed Customer Relations Management System capability.
- For use by accepted students – full online course registration and module selection. The Student Representative Council (SRC) told us that they thought students found the present extent of choice both a positive feature of studying at Glasgow but also potentially a daunting one. This emphasises both the importance of accessible online information but also the quality of the one to one advisement process (which was described as being excessively variable in quality).
- For use by registered students – full online administrative support for such routine transactions as payment, maintaining personal contact details, examination and teaching timetabling, assessment administration, results reporting and access to learning and teaching materials via a VLE / MLE.

- For use by staff – sophisticated and tailorable management reporting to enable strategic planning, operational management and direct intervention and the support of students on a personal basis. Also to enable efficient process administration, for example to improve the timeliness of feedback on student course work (flagged as being worthy of improvement in the recent NSS) or in support of the employability agenda.

Satisfying these requirements cannot be achieved solely through system developments, it is clear that process change will also be required if the benefits sought for students and staff are to be realised.

Therefore our recommendations are that the university should:

- (R4) Conduct a process review of the full cycle of undergraduate student administration from the point of application to the point of alumnus.
- (R5) Specify functional requirements for an end to end SMIS encompassing all the core functional aspects of these processes.
- (R6) Ensure that within the work for (R5) above, certain functional requirements are prioritised in order to deliver the necessary business benefits, including; features that will actively support and enable proactive retention management, student self-service and flexible and configurable management reporting.

2.3 Graduate administration

The University's present business strategy aims to secure 100% growth in PGT and PGR students.

These increased numbers will generate much welcome revenue. They will also stimulate the virtuous circle that is a consequence of a strong PGR base by feeding active research and improving Glasgow's relative performance compared to its key domestic peers.[8]

Consultees for this review are acutely aware of the importance of these targets and of the challenges that must be overcome if they are to be achieved.

These include both process improvement and enhanced SMIS functionality.

In terms of process administration consultees highlighted that:

- The current time taken to reach decisions in respect of PGT and possibly (see paragraph below) PGR applications must be capable of great improvement. Overall elapsed time to reach a decision is considered an important factor in whether an individual student chooses to pursue a place of study. Consequently it directly contributes to the overall effectiveness of student recruitment.
- In respect of PGR students, the recruitment process is one that is almost exclusively carried out by the faculties and individual academics themselves. Whilst present systems do afford the facility to record PGR applications we understand this capability is not widely used and as a consequence there is very limited information available by which the university may assess its effectiveness with regards to applicant conversion. As a consequence the university cannot readily assess the extent to which it will be dependent upon stimulating increased numbers of enquirers to achieve the target PGR intake.

[8] We have been told that PGT and PGR numbers at the university are at 60-65% of the level of relevant comparator levels.

- In respect of all categories of Graduate students, the present processes and systems are viewed by many consultees (especially academic departments) as unhelpfully inflexible and ill-equipped to support the needs of an increasingly heterogeneous community of scholars and students. The present systems contribute to these concerns with the Central Course Information Management System (CCIMS) coming in for particular criticism.[9]

Therefore our recommendations are that the university should:

- (R7) Conduct a process review of the full cycle of graduate student administration from the point of application to the point of alumnus.
- R8) Specify functional requirements for an end to end student MIS encompassing all the core functional aspects of these graduate administration processes.
- (R9) Ensure that within the work for (R7) above, certain functional requirements are prioritised in order to deliver the necessary business benefits, including; features that will actively support and enable proactive recruitment, enable efficient admissions processing and provide the self-service functions described under 'Undergraduate administration' in the preceding section.

Achieving the target PGT and PGR increases are clearly a key priority for the university.

For that reason we consider that such initiatives that take place in response to this review should *prioritise* benefits realisation in the field of Graduate administration over all other areas of activity and we have reflected this in the outline 'route-map' later in this report.

2.4 Information Management and Performance Metrics

It is imperative that the university has the capability of flowing through to faculties and departments the necessary information across a range of datasets such as Students, Finance, HR etc that will allow them to be able to make informed decisions about the contributions they need to make to the university's strategic objectives.

Part of that process will be the improvement of the Business Intelligence capacity of the SMIS on which we have already made recommendations.

An improved Business Intelligence capacity within the SMIS would also enable faculties and departments to have direct access to dependable and insightful information that will inform their own target setting and measurement of success, in relation to their contributions to a number of the Learning and Teaching strategic objectives. These could include reporting against the following prospective metrics:

- Increasing the number of International students e.g. the number they have, where they come from, where the emerging markets are etc.
- Increasing the number of Postgraduate headcount e.g. how well are they performing against the university average, how much more do they need to contribute in order to meet their contribution to the university's new PG targets
- Increasing the % of 'Home' Undergraduate students having an international experience e.g. how many are in their faculty / department, what opportunities are available compared with other Faculties / Departments etc

[9] The PiP project (Programme Information Project) has been established to replace CCIMS and it is being taken forward outwith SRIP

- Improving Retention - How well or otherwise is a particular course / department / faculty performing in relation to the university average and new target. What are the profile characteristics of the university's students against pre-defined profiles that are susceptible to drop-out. This type of information can assist in targeted intervention, thus directing resources where they are likely to have the best effect.
- Improving the university's completion rate to that of its Russell Group comparators. The above retention information will play a dominant part in influencing the HESA Performance indicator of overall probability of completing a degree programme at University of Glasgow.
- Improving Entry standards: position in THES table for tariff points - faculties can track in real time the qualifications of students who are being admitted or are being assessed for admission and can influence admissions decisions.

Whilst we understand at present this information in available centrally, the ease with which it is obtained and the ability to distribute the information more widely would be enhanced by a more functional Business Intelligence front-end to the present SMIS.

2.5 Process management, governance and the current system

2.5.1 Process Management and cultural change

There is no doubt that there is much good practice in managing the student experience and general student administration within individual departments and faculties. The problems arise when the processes are analysed at an institutional level and from the perspective of overall effectiveness and efficiency.

The majority of consultees believe that key student administration processes are not designed with the end user in mind (often but not always the student) but derived from accumulated custom and practice.

The consequence of this is that the university is unable to respond flexibly to changes in the external environment that require it to evolve how it operates. (SRIP and other programmes have responded in the past but the time, expertise and resources have been major constraints).

To deliver the aims of the university's business strategy we believe existing custom and practice in student administration must be challenged by means of a wide-ranging Business Process Review (BPR) and we have already made specific recommendations for undertaking this work in respect of the main processes.

This in our view must be accomplished through a programme of participative analysis by which we mean relevant staff at all levels must be thoroughly involved as:

- Consultees who understand how current processes work – both administrative and academic staff.
- Sources of ideas for improvement.
- Sounding boards for proposals for change.

The processes that will be encompassed necessarily include those that might be deemed partly or wholly academic in character (for example the process which a new programme is established, approved and launched).

To achieve change it is necessary to break down any resistance predicated on a 'not invented here' response and involving staff is the most effective approach to achieving this aim.

As an organisation's 'culture' is perhaps most easily defined as 'the way we do things around here'; what we are in effect recommending is that the university enthusiastically pursue a process of organisational cultural change.

But 'culture' in this sense is the university's largest organisational control system and Glasgow must adopt a strategy that encompasses:

- Tackling its overt culture (how it projects itself to the outside world).
- Recognising and addressing its covert culture (how processes, people and systems really operate).
- Identifying the preferred culture it wishes to achieve as opposed to that presently "in –use''.

An organisation's 'covert culture' carries the real beliefs, values and norms – unnamed, un-discussed and sometimes unmentionable. Our recommendation to pursue BPR is intended to directly address the need to expose and address such process and system deficiencies as the university's present culture is concealing.[10]

BPR is also a necessary precursor to specifying functional requirements for a new SMIS, whether this be achieved through an off-the-shelf system or by means of enhancements to the present in-house software.

Only an institution-wide BPR programme will deliver the necessarily informed and evidence based analysis to enable the university to distinguish between issues and deficiencies in its current student administrative 'systems' that:

- Can be readily overcome by process change and cultural change.
- Can be satisfied by means of organisational change.
- Can be met by means of staff development and training.
- Require the deployment of some form of system to perform a function.

BPR also enables the university to thoroughly baseline existing processes – a necessary precursor to any subsequent change programme.

2.5.2 Process Governance

In addition to the need to address process change, we believe the university must also consider the issues of process management and governance.

At present there is no policy or mechanism, governance structure, administrator or academic that can lay claim to being accountable for the processes governing the student experience.

This is not unusual in UK HE. It is also an important factor that contributes to poor process performance because there no one person accountable for process performance.

We believe that the university should consider making a senior academic accountable for the overall student experience.

It will give a locus for student process management that will provide the necessary focus for joined-up thinking on the overall student experience.

It should also be the role that sponsors any and all BPR of student administration as recommended in this report (we believe that the roles that are closest to that we have described are those presently fulfilled by the Vice Principal Learning and Teaching and the Head of the Deans Group).

[10] Cultivate your culture – G Egan Management Today 1994 pp 38-42 is an interesting source.

2.5.3 The current system

The current SMIS system, quite rightly, is recognised as being the product of hard work by committed and professional staff. The resources presently available for development work are limited and relatively sparse in comparison to other peer group HEIs.

Overall functionality is considered competent by consultees and in, for example, the area of online registration with WebSurf, very good. In other areas such as graduate processing, (the Direct Admissions system) there is very strong user pressure for major functional improvements (and we have noted that there is work in hand planned to address this).

If the system is therefore generally capable of meeting present core needs, what are the merits in considering an alternative strategy, namely the procurement of an 'off the shelf' system?

The weight of the argument falls to the need to:

- Improve processes at a pace unsupportable by the in-house systems.
- Deliver major enhancements in system functionality at a pace of change unsustainable by the in-house systems.
- Deliver functionality that lies outside the capability of in-house systems.
- Operate systems that can be supported over the long-term both in terms of operational life and sustainable modernisation at an affordable price.
- Deliver benefits to users at a pace that matches business need.

Consultees consider that current system business development takes much longer than desired. There is also a general view that increasingly sophisticated user requirements cannot be satisfied by progressive in-house development.

Some evidence of user impatience with the current pace of systems development can be found in the number of 'local' or 'shadow' systems purportedly in use in Schools and Departments. One such locally developed system originally designed to administer student 'Placements' (called 'Vale') has evolved further functionality over time and is now being used in several locations.

Further evidence that current in-house systems development cannot meet increasingly sophisticated user needs lies in the absence from the current SRIP programme of such major requirements as a CRM enquiry management system.

Aside from delivering the necessary enabling technology, the process dimension is the other main factor to be considered.

The present approach to systems development has had to be inherently tactical because of the available resource and in-house led development path.

This in turn has:

- Conditioned users to expect systems that support existing practices and procedures rather than stimulating process change.
- Been unable to overcome entrenched views within both administrative and academic circles as to the need for change.

Continued in-house development will reinforce this culture making it impossible for a step change in performance improvement to be achieved.

It is clear that senior users want future system development to be strategic in approach, application and impact.

To achieve this process change must also be strategic in application and procuring an 'off the shelf' system will force the pace of such change and will also force changes to academic processes by streamlining disparate academic processes and procedures.

It will also (to quote a member of the senior management team) "crystalise the illogicalities of many existing processes".

Accordingly we conclude the university must examine the capabilities of current 'off the shelf' systems and initiate the necessary programme of work leading to procurement and implementation.

2.5.4 Conclusion and Recommendation (s)

To deliver these findings the university must embrace a major programme of institutional change.

Therefore our recommendations are that the university should:

- (R10) Establish a change programme with executive membership. This programme will encompass both process change and system investment / procurement / deployment. It must have very senior academic sponsorship to supervise and drive the comprehensive programme outlined elsewhere in this report. It should be led by a senior academic.
- (R11) Initiate an overarching programme of business analysis. This should involve all relevant staff to enable the university to distinguish between issues and deficiencies in performance that:
    - Can be readily overcome by process and culture change.
    - Can be satisfied by means of organisational change.
    - Can be met by means of staff development and training.
    - Require the deployment of some form of system to perform a function.
- (R12) Make a senior member of staff accountable for the overall student administrative process.
- (R13) System investment. The university must seriously consider investing in a modern off-the-shelf student MIS.

2.6 Reality check Vs 'the Wider World'

This review as well as being informed by the views of consultees has in itself been 'outward looking' and informed by the experiences of other relevant HEIs from across the UK and abroad.

This provides both a reality check for the university but also a means to assess the relative weight other HEIs have placed upon key drivers for change.

This is because many universities, some of which Glasgow would consider peers[11] (e.g. Edinburgh), have recently or are now embarking upon major business process change and in many cases are choosing to replace legacy software (often but not always internally developed) with 'off-the shelf' systems.

What is to be learnt from these HEIs?

[11] These include, to our certain knowledge between 2002 and 2004; Cambridge, Oxford, Imperial, Manchester, Liverpool John Moore's and Wolverhampton. Universities planning to replace their systems from 2006 onwards include Edinburgh, Glasgow Caledonian, Heriot Watt, Nottingham, Southampton and Queens Belfast.

2.6.1 Drivers

The drivers other HEIs have typically identified include (but are not limited to):

- To secure or sustain competitive advantage in a more uncertain, challenging and volatile environment.
- The need to build an institutional-wide ability to support online transactions with prospective and actual students both for administrative and teaching purposes.
- The demand to have 'one version of the truth' as regards the student record with a single shared system that supports all the key administrative phases of the student lifecycle – which more often than not are currently supported by several different systems with different access routes, screens and user procedures all of which contribute to administrative inefficiencies.
- The inability of in-house development systems to offer the functionality or the flexibility to deliver these needs at the pace at which business change is required. (Also to mitigate and ultimately remove dependencies upon legacy systems that can no longer be cost-effectively supported).
- The need to reduce the incidence of local (aka 'shadow') systems holding student data that have arisen due to unmet need, and which by their existence also reduce the pace of process change that can be achieved.
- The view, following careful comparative analysis, that the very best of available 'off the shelf systems', whilst never by their nature able to replicate existing processes in detail, represent an approach which is born out of the experiences of many hundreds of other HEIs both in the UK and overseas and thus often may support more efficient and effective processes than present procedures allow.
- The belief that successful implementation of such a crucial system demands institutional wide process review which in itself offers major opportunities for improving performance, the student experience and the quality of research, teaching and learning.

Other HEIs typically view these drivers as complementary, in that many are mutually re-enforcing as opposed to being mutually exclusive. All, in our view, are pertinent (to differing degrees) to the position in which Glasgow now finds itself and serve to reinforce the relevance and timeliness of the recommendations set out in this section.

2.7 Conclusion

This section has taken a strategic view of existing student administrative processes and systems, considered what if any, are the drivers for change and made recommendations for action.

The next section considers the vision for the delivery of student services in the future.

Part 2

3.0 Vision

This section:

- Sets out a draft vision for the delivery of student services, informed and coloured by the preceding analysis.
- Considers the values concomitant with this vision given the emphasis upon both process and technology as key enablers.
- Explores the key components of the vision by reference to the university's business strategy, benefits to stakeholders and implied change.
- Makes suggestions for the criteria the university might employ to evidence that it has achieved the suggested vision, including prospective metrics.
- Concludes with a detailed description of what the student's experience of the future might comprise from the point of their very first contact as an enquirer through to becoming an alumnus.

3.1 Overview

In all of our interviews with consultees we sought their views of what the vision for the student experience should be for the University of Glasgow.

In distilling their feedback the vision expounded by consultees was very clear:

'To put the student first' by delivering an outstanding experience enabled by:

- *Learner-centric processes.*
- *Modern technology.*
- *A culture of continuous improvement that leads international best practice.*

Nothing less is acceptable for a university aiming to be judged as being within the top 50 of its peers internationally, and the top 10 domestically.

3.2 Values and Technology

This vision must facilitate delivery of such a student experience through the deployment of web-based administrative services that support transaction and relationship management 24/7 anywhere in the world; the 'martini' [12] concept applied to deliver an 'online campus'.

However, technology must not be allowed to subvert the character and values of an effective university-student relationship borne out of the dynamic between academic and scholar – values that are at the heart of the university's Learning and Teaching strategy.

Routine administrative processes can and must be enabled by a modern, flexible and adaptive self-service environment that frees academic staff from repetitive and inefficient administrative tasks.

But the vision must not be satisfied by technology at the expense of face-to-face contact or the interpersonal exchange that lies at the heart of the learning environment.

[12] 'Any time, anywhere'

3.3 Components of the vision

To be relevant the vision must be explicitly connected to the university's business strategy, its values must be consistent with that of the wider institution, the benefits it will deliver must be meaningful to staff and students.

Thus we propose that the vision is to deliver student administration with processes and systems that:

Support the achievement of the university's *business strategy* by:

- Stimulating and contributing to improved recruitment, especially of graduate students.
- Enabling and supporting improved student retention, especially of undergraduate students.
- Supporting institutional performance management through the use of relevant metrics.

Reflect and provide focus for the university's *values*, by:

- Being learner-centric and be focused upon improving the learner's experience of study.
- Supporting the diversity and heterogeneousity of the university's learning community.

Release meaningful *benefits* directly to key stakeholders, by:

- Enabling learners and scholars to readily access data and knowledge they require to complete their learning.
- Delivering a one stop, one-click service that makes it simpler for all users to get things done in real-time.
- Improving efficiency by releasing academic and administrative staff from routine administrative tasks by connecting people, data and systems across departments, faculties and the central university.
- Improving effectiveness by improving the accuracy and accessibility of student data for administrative and academic purposes.
- Improving flexibility through the use of a single shared system accessible to all users according to need.

Make effective use of modern technology and effective *process design*, by:

- Maximising the availability of information through browser-based access which enables flexibility in use and the selection of the technology platform.
- Being process orientated, encouraging the development of a culture of continuous improvement in student administration.
- Delivering role-based information to students, academics and other stakeholders so they can access the information they need.

Be *outward* and not inward looking, by:

- Drawing and being informed upon relevant practice from across the UK and abroad.

3.4 Evidence of success

The university in the future will be able to judge the realisation of its vision by whether it has:

- Contributed to the achievement by the university of its business strategy, as evidenced by:
    1. Increasing the number of International students.
    2. Increasing the number of Postgraduate headcount.
    3. Increasing the % of 'Home' Undergraduate students having an international experience.
    4. Improving Retention.
    5. Improving the university's completion rate to that of its Russell Group comparators.
    6. Improving Entry standards.
- Learner-centric processes that are flexible and designed to meet the needs of a heterogeneous learning community as evidenced by its responsiveness to demand for new programmes and its ability to attract and retain a diverse learning community.
- Technology enabled process administration that has consigned routine / cyclical tasks to automated transactions and web-based self-service, as evidenced by the proportion of students who successfully apply, enrol and select modules / electives online.
- Greatly enhanced the use of business and market intelligence to inform recruitment activities as evidenced by the availability and use of relevant management information.
- Developed all relevant staff to make the full use of modern systems as evidenced by levels of usage, and the investment made in training.
- A culture of continuous improvement that is lauded, resourced and encouraged to flourish as evidenced by the extent of process improvement activity taking place.

3.5 Turning the Vision into the student experience

There is a challenge with any 'vision statement'; translating it into a real meaningful experience that delivers the benefits sought by stakeholders.

So to illustrate this vision in a very different manner this section offers one view of what its realisation might mean on a practical basis for a student of the future.

The scenarios are described from an individual's perspective; what they may encounter at each key stage as they move through their HE experience. The narrative also includes a commentary on what may be happening in the background, which the student may not even be aware of. The whole 'student experience' is proposed in the context of existing technologies within the education sector, emerging international practice (especially in North America) and likely developments based upon the experiences that are present either in other sectors or in general day-to-day technological developments[13].

[13] See also 'A Real-Time Solution: How It Works' in 'Information Connects, Peoplesoft Enterprise Campus Solutions 8.9' (published by Oracle) at http://www.oracle.com/media/Peoplesoft /en/pdf/datasheets/peoplesoft-enterprise-campus-solutions.pdf. which offers a 'North American' perspective of a 'student journey'. We have found it useful to draw upon this text in certain instances and quote marks are used to illustrate this within the narrative.

"Prospects and Recruiting"

Sarah is a 6th Former who wishes to apply to go to a University. She visits your Web site which guides her to the registration page where she "registers as a prospective student". During the registration process, the system asks Sarah some basic questions that it can use to authenticate her and then it directs her to further relevant information based upon her areas of interest. "As a prospect, she can request information about the campus or apply online". A series of Frequently Asked Questions (FAQs) is available as she moves through the system, with the top 10 FAQs being presented at each stage as she navigates through the system.

Once Sarah has registered, "she is automatically allocated a recruiter" that she can refer questions to.

Sarah is able to log onto the SMIS via her mobile telephone, where she can raise enquiries verbally, as well as raising text based queries. If Sarah wishes, she can direct answers to her queries to her mobile telephone, as well as to her personal record, where she can access these either through voice mail, text or Blackberry.

Sarah's password and login ID provided at this stage is the only password and ID that she will need to access her personalised page throughout her student life and on into alumnus. This includes any information she may require regarding her financial status or various tutors that she may need to interact with.

The system tracks questions asked at each key stage of the student interaction with the Student Management Information System (SMIS) and time stamps these so that, as questions are answered, a database of likely FAQs is developed for a given point in the academic year, for a given programme, and for a given function or area of interest.

The SMIS takes over; it sets up a record for Sarah which sets out details of the interactions she has with the system. The system is intuitive enabling proactive interaction with Sarah as additional relevant information becomes available for any areas she has highlighted as of interest to her. It is also able to provide links to information that is associated with her areas of interest [as per Amazon: 'Other customers who requested this book also bought…..']. The relationship management functionality of the SMIS also enables the Recruiter, assigned by the SMIS, to communicate with Sarah, automatically logging any emails or hard copy letters that are produced via the system.

"The Application"

When she applies, Sarah is guided "by the system to the appropriate web pages dealing with financial aid", which she can track as a 'Favourite' page for quick future reference. This information is available as standing information available to Sarah if she raises a question or actions a search at any point of her interaction with the SMIS. Sarah can request information about "financial aid based upon her personal circumstances". While her application is being evaluated, the system's financial aid module determines her financial need "based on the programme she wants to pursue and the resources she has" and informs her accordingly. The system also makes Sarah aware of any bursaries or other financial aid packages that may be available for her programme of interest. Links are available to enable Sarah to apply for these on-line.

The system has set up a student record for Sarah enabling her to have access to the communications she has had with the University, including access to draft versions of the application form, which she can work on up until the point of submission. It also presents her with details of any bursaries or other aid packages that she may have applied for and will notify her of the results of these applications once a decision is made. Sarah can choose the way she is notified, including via mobile telephone, etc as before.

The system automatically calculates a financial aid package based on her needs and the available funds of the institution. Faster evaluation of applications and financial aid packages means higher acceptance rates.

"Enrolment"

Once the University extends an "offer of admission and a financial aid package" to Sarah "she accepts both". The SMIS "then readies her to enrol online". Sarah is "able to search for classes by the time of day and day of the week to create a schedule that accommodates her work schedule". The system also identifies who teaches each module and where it is to be held so that she can plan travel times into her schedule in case classes are held at different sites. Consequently, the system has provided a personalised, detailed timetable for the term, year or other period depending on the nature of the programme Sarah wishes to undertake. This information is available on her SMIS personalised page and can be accessed by her via her WAP mobile 'phone.

The system continues to provide support through the provision of FAQs tailored to Sarah's programme and the enrolment process.

The SMIS also "checks her student account to see how much she owes in tuition" and sets out on her personalised 'Hub' page how much is due and for what, the source of the financial aid package and, as she pays her fees, how much has been paid and when. "From this page, she can pay the difference with a credit card," can set up direct debit or can set up an account to enable a sponsor to pay her outstanding fees.

"With her class schedule set, she can purchase books." The system proactively informs Sarah of the books she will need for each programme and provides links to suppliers' web pages to enable her to do so, including access to sources providing second-hand books. She is also able to check the availability of a given book in the University library and whether there are electronic versions of the required texts available online.

"It's all online, all secure. The integrated, easy-to-use system means increased student satisfaction."

The system supports the allocation of rooms based upon the proposed programme/ module timetable, preferred geographical location, anticipated student numbers and any known student disabilities that need to be taken into account in deciding the allocation of the room. Rooms that require additional equipment for a given scheduled learning event to support a student's needs are highlighted so that the equipment is automatically booked and support staff can ensure it is available at the appropriate time and place.

Academic staff can identify on the system what books students will require for each module of a given programme. The SMIS also allows additional books / texts to be added as and when they become available. This means that reading lists can be updated with minimal effort and be available to the student cohort immediately, if so required.

"Course Progress"

As Sarah undertakes her course, "she can go online anytime to get grade and assignment information." The system also provides a link to the University's Virtual Learning Environment so that she can access lecture notes, videos or other material required in support of her tuition. Sarah can also access assignments that have been posted for her by her tutors and can securely post completed assignments for tutors to assess. "Her tutors are also able to securely post her various assessment grades, provide feedback on her work and enter detailed notes about what is expected of students, as well as automatically calculate her overall results."

All of this information is available for Sarah to review at any point in time and contributes to her lifelong learning record, which she will subsequently be able to access as an alumnus.

The SMIS has also enabled Sarah to identify other students in her various study groups, linking these people to any assignments that are submitted as group assignments or enabling her to identify any such informal study groups that she may

become involved in. The system enables Sarah to interact with these individuals through a number of means, through the use of Blogs, message boards, group email, video conferencing and instant messaging. All of these features can be accessed from Sarah's WAP video phone or other similar media. The SMIS also enables the students to interact with a range of tutors (including course tutors, specialist tutors, personal tutors, research tutors, etc) in the same way so that the group can meet virtually for tutorials or ad hoc discussion sessions. It also enables the group to access their duty / specialist topic tutor (who is a tutor at another university based in the United States) and who also contributes to their learning experience.

During the term, there have been a number of instances when seminars have had to be moved to other rooms and a couple of instances where tutorials have had to be cancelled due to illness. All these changes have been flagged on Sarah SMIS personalised page with an appropriate alert. She has also been automatically alerted of these changes via her mobile telephone, including details for the new location of semesters. Sarah has been particularly impressed in that whenever there has been a change in location, equipment has always been available in the new room to assist her with her visual disability.

"Midway through her first term / semester, Sarah is able to start planning her modules for the next term / semester." Her programme is unusual in that the first year is split over 4 terms; including a summer term. Her second year is split into 2 non-standard length terms where she is able to select a variety of modules, including modules offered by other Schools, with the remainder of the academic year being spent on a training placement. The system provides Sarah with all the information required to enable her to plan her subsequent term(s). This includes detailing the number of credits she will achieve through the various modules she has selected and warning her when she accidentally exceeds the maximum number of credits allowed. She is able to make her selection in 'draft' form and amend these up until she submits her selection. During this time she is able to interact via the SMIS with various tutors to help her decide the most appropriate module selection.

Going online, she can see the prerequisites she must meet before taking a class, as well as what courses she needs to graduate. "The system automatically posts Sarah's grades to her record determining whether she is in good academic standing. Her advisor, who has online access to her record, is able to help her map out her academic career."

When Sarah is close to graduation, her SMIS personalised page flags whether she has satisfied graduation requirements.

The SMIS is fully and seamlessly integrated into the University's HR, finance, library, VLE, estates and timetabling systems to ensure that only one record exists and is maintained across the University and to ensure that all relevant information that Sarah requires is available from her single login.

The SMIS is linked to the estates system so that if there are any students in a given group with disability requirements, any rooms selected for a given learning event will be chosen on the basis of their ability to meet the student's needs. Similarly, any changes in location are supported by the system so that the system helps with the selection of the new location by offering the accommodation available based upon the tuition group's needs and size.

"Alumni Involvement"

"Once Sarah has graduated, she can remain connected with the University in many ways." She can access her student record as she requires, for instance to support her application to undertake a postgraduate study programme or application for employment. She is able to produce an online transcript / diploma supplement to which she can provide access to by a third party in the knowledge that the information accessed is secure, verifiable and a reliable record of Sarah's achievement.

In addition, Sarah can update her personal information online via her personalised record, using the same login as she has used throughout her student career.

Through this page she can also “learn about events of interest, donor programs, and lifelong learning opportunities. She can also register for professional development courses, and, at any time, from anywhere, she can go online and check her history of donations or make a payment by credit card.”

Her record offers her a portal through which she is able to undertake short, ad hoc professional or personal development courses online including providing access to seminars that have been posted that can be accessed via her computer or, as a Podcast on her i-Pod without the need to visit the University; and she is able to apply to undertake further postgraduate research or taught programmes.

The system therefore offers true lifelong learning capability.

3.6 Conclusion

This section has sought to articulate a vision for the delivery of the student experience of the future in terms of:

- Overall aims.
- Relationship to the university strategy.
- Stakeholder experience.
- Benefits realisation.
- The student experience.

The next section examines the actions that will be required to deliver the vision. This is the ‘Strategy’, incorporating a roadmap for action.

4.0 Strategy

The recommendations made in Section 2 of this report set out the key actions that a future strategy must encompass.

The Vision in Section 3 describes the outcomes that are sought; the 'end game' in terms of success factors.

This section pulls these elements together and, informed by the experiences of other HEIs, sets out a high level plan for delivery.

4.1 The experiences of other HEIs

Before examining the precise requirements for Glasgow's strategy, we thought that it would be both informative and illustrative to consider the key learning points of other UK HEIs in driving forward programmes of a similar character[14]:

4.1.1 University of Wolverhampton

Wolverhampton implemented SITS (now owned by the Tribal Group following acquisition in late 2004) during 2003-2005. This University emphasises the importance of robust governance and project sponsorship as being key success factors. It believes the governance structure for a project to implement an SMIS must be established to recognise:

- That the project is primarily about delivering changes in processes, procedures and services enabled by new technology – therefore sponsorship should be vested in the senior executive with responsibility for delivering student administration.
- The Registry of the University, together with the administrative cadre in Schools / Faculties / Departments and the MIS Department are the primary internal stakeholders and must be thoroughly engaged with the project both in terms of furnishing resources to the project team and in appropriate representation on Steering Group. Academics must also be proportionately engaged.

Wolverhampton has invested circa £3.5m in its change programme of which £1.75m will have been expended upon a new student system.

4.1.2 University of Manchester

Manchester is two years into the implementation of the Campus Solutions student system (previously vended by Peoplesoft, now Oracle since the latter's acquisition of the former in January 2005). This University considered that a critical first step in their ongoing project was to undertake a thorough process analysis to:

- Draw out opportunities for process and technology enabled improvement.
- Establish the base from which transformation through process change and technology modernisation would commence.

Close involvement of the Faculties through the direct participation of the senior administrators of same has proved both very necessary and important.

The University also emphasises that articulating or documenting new processes does not make them real or secure their active operation – repeated, sustained efforts through cross functional process groups to embed new practices are a necessary

[14] We have selected these three universities as being broadly representative of the sector; Manchester is research intensive with an international focus (and very large), Wolverhampton a regional university with a strong WP agenda, Derby a medium sized institution that combines both teaching and research in certain leading fields. All three HEIs, in our experience, reflect particularly good practice and proficient project management.

feature of such a complex project. This is really hard and remains both a key challenge and focus of activity for the University.

Manchester has an overall budget of £12m for its change programme of which up to half will have been expended upon a new student system.

4.1.3 University of Derby

Derby has substantially completed implementation of the (now Oracle owned) Campus Solutions student system (initiated in 2005).

This University has highlighted the following key enablers for a successful project:

- An institution-wide regulatory and assessment framework.
- Corporate commitment to BPR and the willingness to do things differently.
- The prior experience of implementing major corporate systems of the key managers at programme and project level.
- Communication at all levels being key, and thus establishing structures to enable this being essential to a successful change management programme.
- Being benefits led at all times.

Derby has a budget of £5.88m for its programme, of which perhaps up to £2.8m will have been expended on the new system.

4.1.4 Conclusions

The 'lessons learnt' by other HEIs investing in new SMIS have some important common threads:

- The relative priority to be given to establishing a governance structure for directing and securing process change.
- The necessity of securing senior academic sponsorship and leadership of this structure.
- The development of a business case for process change and investment in new systems that is focused upon benefits realisation.
- The articulation, sharing and ongoing communication of a communications programme in support of the wider change initiative.

For information, examples (necessarily anonymised) of the timelines followed by four UK HEIs in implementing a new SMIS is at Appendix D.

4.2 Glasgow's strategy

We are clear that Glasgow's strategy must be to establish a change programme with senior academic sponsorship the purpose of which will be to deliver the Vision for student processes and systems.

The programme will accomplish this through:

- Establishing the necessary governance structures.
- Initiating a programme of business process analysis.
- Devising the requirements for new SMIS.
- Overseeing the procurement and implementing of such new system(s) that the requirements indicate as being necessary.
- Directing the ongoing improvement in process management required to maximise the benefits from the use of the new system(s).

4.2.1 Establishing the necessary governance structures

In Section 2 we described the basis for recommending that a programme executive (or equivalent) must be established with very senior sponsorship to supervise and drive such a comprehensive programme of change that this review has found necessary.

We are not persuaded that a suitable governance structure for such a programme presently exists, and therefore believe it must be established from first principles.

The product of this analysis must drive the formation of a process change programme, necessary restructuring of student administrative functions (for example the need to develop a business and market intelligence function), staff development and the specification of functional requirements for student MIS.

Selecting the members of this group will need to be carried out with care and as a first step following this review.

We would recommend that overall sponsorship and direction of the programme be vested in a very senior academic, with other members being drawn from university services, the registry, faculties and MIS. Our initial thought is that the sponsoring role might most effectively be discharged by a senior executive of the University.

The programme would necessarily consist of a series of closely interlinked projects of which the first would comprise Business Process Analysis.

The Programme must also ensure that key inter-dependencies with other major initiatives are effectively managed.

Thus, for example, the ongoing 'Reputation Review' being sponsored by the Corporate Communications Office would be one important inter-dependency as would such work to develop the current regulatory and assessment framework of the university.

4.2.2 Business Process Analysis

Business process change or rather process analysis to enable the effective design and operation of new or enhanced processes will be critical regardless of the technical strategy eventually determined.

A SMIS is after all only an enabling tool, and there is ample evidence from within and beyond the sector of major system implementation projects that fail to achieve their potential. Often this is because of process deficiencies, in particular organisations not properly understanding how existing processes or systems actually operate.

Real improvements in the student experience and the other objectives Glasgow has identified will be achievable only if the university accepts that it must analyse its processes to ascertain where performance can be improved by means of process improvement, organisational change, staff development and the enabling use of technology.

Another way of describing this point is to say that the degree to which Glasgow will be open to process change will directly inform the benefits it will accrue from investing in a new system.

Achieving this requires that the university should establish the capacity to undertake extensive process analysis of the student administration cycle. The core skill required to perform this function is business analysis (whilst knowledge of HE is useful but not critical).

To attain the necessary level of competence and capacity in process analysis the university may wish to consider the use of external consultants within a joint university / consultancy business analysis team structure.

This brings the benefits of:

- Enabling more rapid deployment and initiation than would be possible if relying solely upon internal resources.
- Establishing skills transfer as an inherent part of the working relationship between the consultants and university staff.
- Allowing the university to draw upon the wider experience of the consultants in conducting BPR programmes both within Higher Education and from other sectors.

This approach also mitigates the risks of:

- Work on starting the BPR being pushed back because of the time it takes to get university staff released from current duties with a knock-on effect on system deployment that materially delays benefits realisation.
- Excessive dependence upon consultants limiting the university's understanding of its own processes whilst simultaneously driving up costs.

Initiating process analysis offers many obvious and direct benefits, and others that are less overt but useful.

Direct benefits include using the process of business analysis to identify the key functional requirements the university will require of any new solution that it may choose to procure.

Less directly the work of business analysis will identify (as a by-product of participative workshops) those staff across the institution with a particular affinity for contributing effectively to process analysis and an enthusiasm for developing and applying new approaches to solving problems.

In other HEIs such staff have often gone on to form the nucleus of the institution's student system implementation team.

Another benefit is the act of engaging in process orientated participative dialogue establishes a modus operandi that will be characteristic of the project to implement any new systems. This is not a mode of working that will necessarily be familiar to many staff in the University and preparing them for this experience will be valuable.

Finally, process analysis of the scale and character required for this type of programme presents the opportunity to establish a pace and momentum for change necessary to support the demanding targets established by the present business strategy.

4.2.3 Devising the requirements for a new SMIS

We have already stated our view that given the available evidence the present development strategy for student MIS cannot keep pace with business need and is no longer fit for purpose.

The university must invest in a step-change in its student system capabilities.

To meet the functional requirements sought by users, and which we are clear represent the application of sector-wide best practice, the university must seriously consider investing in a modern off-the-shelf SMIS. Internal resources are insufficient for this purpose and we believe that over time superior Value for Money can be achieved through an 'off the shelf' procurement.

The functional requirements for a new SMIS comprise one set of the key outputs from the previously described business process analysis.

Complementary work on the required technical specification, the commercial tests to be made of suppliers, required implementation methodologies and non-functional (e.g. support) requirements will also be required as well as the mode and timing of procurement.

Formulating these requirements should also address the business benefits to be gained from shutting down such local or 'shadow systems' that would no longer be required once the new SMIS is deployed.

4.2.4 Overseeing the procurement and implementing of such new system(s) that the requirements indicate as being necessary

Procuring the new system will almost certainly require the publication of an expression of interest with the Official Journal of the EU (OJEU). Thereafter and having short-listed respondents against pre-determined criteria the university may wish to follow the traditional model of issuing an ITT or may choose to adopt the negotiated dialogue which offers interesting opportunities for developing both the detailed specification of needs and also for ensuring suppliers are properly conversant with the university and its needs.

This phase of the programme places an emphasis upon the procurement function of the university and would represent quite possibly the largest system acquisition (in terms of cost and complexity) by the university to date.

4.2.5 Directing the ongoing improvement in process management required to maximise the benefits from the use of the new system(s)

We were concerned to establish in the course of this review the 'appetite for change' amongst consultees with regards to current student administration processes.

Consultees have consistently told us they believe it to be very great and that the senior staff of the university are ready to see, support and drive necessary change.

This commitment will be critical as the strategy this section describes comprises a long-term programme of change.

Initial implementation of a new system together with preliminary process change will deliver early benefits. But persistence over many years (in driving forward process change) will be required for the benefits of the investment that we are recommending to be full realised.

4.3 Possible route-map and resourcing profile

Given the recommendations made in this review (collated and summarised in section 6) we have given some preliminary thought to the key features of a route-map that could begin to meet the needs of the programme described.

The plan, presented in Appendix E, is based upon completion of the following key stages within the associated milestones:

- Completion of business process analysis by February 2007 (assuming a start date of November 2006).
- Expression of Interest (EOI) issued by March 2007.
- Completion of functional specification by April 2007.
- Issue of ITT by May 2007.
- Contracts signed with SMIS supplier by September 2007.
- Implementation of enquiries / CRM by April 2008.
- Implementation of PGR admissions handling by July 2008.

- Implementation of PGT admissions handling by September 2008.
- Implementation of undergraduate admissions in readiness for 2009 admission by October 2008.
- Implementation, configuration and activation of assessment module by January 2009.
- Piloting of assessment module by June 2009.
- Implementation of financial aid, registration / enrolment, SLC and associated interfaces by August 2009.
- Implementation of all key external reports by August 2009.
- Implementation of certification and graduation module by February 2010.

The plan therefore suggests an implementation period of just over two and half years and with the following internal resources being available during the periods of peak activity:

- 1 fte Project Manager.
- 1 fte Project Officer / Administrator.
- 1 Technical (MIS) Project Manager
- Up to 4 fte process and business analysts for the duration of work on the key student administration processes such as enquiries, admissions, assessment and reporting.
- Up to 4 fte Oracle DBAs and Systems Developers.

This represents solely the minimum likely internal resource profile that the project may require and in fact the total number of staff to be involved as members of the project team would likely exceed 25 different individuals though not all on an fte basis.

Resourcing such a team (assuming all internal posts are back-filled) is likely to cost £5m over a five year period (given the need to build up the team in advance of SMIS procurement and then move to a transitionary period to live running whilst still operating current systems).

This must be contrasted against the 2.5 fte presently deployed for system operational support and the profiled 6.5 fte for system development.

In addition there will be the not insignificant commitment required of staff (both academic and administrative) to be involved in process analysis workshops and later on in the project in training for use in such new systems as are deployed. Indeed realising this commitment will be a key success factor.

Thus the proposals arising from this review will require a major investment in relevantly skilled personnel greatly in excess of that presently deployed.

4.4 Conclusion

This section has elaborated upon an overall strategy for delivering the Vision and the specific recommendations made in this review. In it we have proposed the early formation of a Programme Executive and the rapid commencement of Business Process Analysis followed by the procurement and implementation of a new SMIS.

With regards to timing and immediate actions arising our recommendation is that the university:

- (R14) Immediately initiate further detailed planning, establish preliminary governance structures for November 2006 and initiate the BPA by December 2006 for completion in February 2007.

The next section offers some preliminary business and market intelligence on three of the present market leading suppliers of such systems.

5.0 Off the shelf systems

5.1 Introduction

Given this review is recommending that the university consider investing in an 'off the shelf' system, we thought it appropriate to offer a brief commentary on three of the leading firms, namely:

- Tribal (SITS).
- Oracle.
- SunGard SCT.

A fuller narrative examining in detail the issues touched upon in this summary can be found at Appendix C 'Market Profile: UK Student System Suppliers'.

We also briefly comment on the prospective prices of buying a system from each of these suppliers- these observations are necessarily based not on any specific specification of requirements but on our market knowledge and work with comparable HEIs to Glasgow. It must therefore be viewed as only an indicative assessment.

5.2 Tribal (SITS)

Tribal acquired SITS in 2005. SITS was and is the market leader with over 60% of UK HEIs using its student system. Previously owner managed, since 2005 the firm is now part of Tribal's Technology Division.

The product suite is mature and stable, but arguably is not technologically speaking the most advanced available, in particular as it is not presently 'web native'. Sometimes noted as the choice of the conservative university, SITS is starting to come in for criticism for the relative pace of its product development, where it is perceived to be behind some other firms in the same market.

In terms of implementation costs, licenses will be in the order of £0.5m-£0.8m. Implementation costs as with all suppliers are driven by the numbers of consultancy days and some HEIs have bought as little as 200 days support for this though at Glasgow closer to 1,000 will likely be necessary given the institution's size and complexity. Thus whilst overall costs excluding VAT can be as little as £0.8m once the implementation consultancy, additional hardware and support costs are factored in we would actually expect them to be closer to £2m.

This of course excludes internal costs for staffing the project team which if process change is properly resourced is likely to be over twice this again suggesting a total cost close to £5m.

Of note is that this is the system that has just been selected by the University of Edinburgh.

5.3 Oracle

Oracle has in theory two student systems on the market with a total of six UK HEI customers. It has a joint third largest market share at approximately 5%. One system is the original Oracle Student System (OSS) implemented at Oxford, Liverpool John Moore's University and Imperial. The other is Campus Solutions, which was the Peoplesoft student system until that firm was acquired by Oracle in January 2005.

Oracle now only actively vend Campus Solutions and do so with their implementation partner CIBER UK. Unlike Tribal, for example, Oracle only vend the license, with CIBER UK performing all implementation consultancy.

Overall, Campus Solutions is arguably considered the most functionally rich product available anywhere in the world. Although its UK market share is small (Cambridge, Derby and Manchester are currently installing it) in North America it has the second largest share of the market with many hundreds of university users.

However CIBER UK has come in for criticism recently over its poor showing in demonstrating its product when it was short-listed with several UK HEIs. This has been one factor (though others will also have had a bearing) in why it has failed to convert likely opportunities (e.g. Edinburgh) that it might otherwise have secured given the relative merits of its web-native product suite. The other important factor has been cost.

In terms of implementation costs, licenses will be marginally more expensive compared to SITS as will system support and consequential hardware. On average, CIBER UK leans towards a lower implementation consultancy day rate than for example Tribal (£650 is not unknown compared to £850). However, CIBER UK typically proposes between 1,800 and 2,500 consultancy days for system implementation which has to date usually made it the most expensive overall when comparing bottom-line costs with other suppliers.

Overall costs for a university such as Glasgow might therefore be expected to be closer to £5.5m with a further £2-£3m required for internal staff costs suggesting an overall budget closer to £8m would be required.

Of note is that Manchester (though obviously very large with over 30,000 fte students and very complex because of the integration with UMIST) have reportedly bought more than 3,000 implementation consultancy days. However this institution's total budget (including for internal staff with a total project team of 60) amounts to some £12m (of which up to half will have been expended upon the new student system)

The basis for the much greater numbers of days includes:

- The Campus Solutions product being inherently more configurable that its competitors and therefore requiring more time for implementation.
- CIBER UK typically seeking to sell in full time project management which adds an overhead of 3 person years or so (estimated at around 550 consultancy days).
- CIBER's experience with Cambridge and Manchester (though not Derby) being of working with very complex client environments (Manchester's merger with UMIST and Cambridge's Collegiate structure).

5.4 SunGard SCT

This is the Banner product, with the second largest market share in the UK (circa 13% or about 18-22 HEIs using the system or one or more modules) and which is dominant in North America (60% market share) in the same way Tribal is in the UK.

The product is viewed as functionally strong, though the continued absence of an effective CRM feature has become a source of concern to some prospective buyers (reportedly to be launched in the UK market in late 2007).

Like the Tribal product, the Banner system is not the most technically advanced, not being entirely web-native. Implementation costs are in the experience of other UK HEIs typically marginally more than Tribal and less than Oracle / CIBER.

Like Tribal (SITS), SunGard SCT implement their own system and costs for licenses and implementation consultancy likely exceeding £2.5m with internal costs being on a par with a Tribal implementation. Thus overall costs are likely to be in the region of £5-£6m.

5.5 Conclusion

Aside from the three firms briefly described above there are other suppliers of note that offer capable systems, including Campus IT (an Irish firm with six UK HEI customers though none of which are research intensive institutions), Aggreso (Distinction systems) Capita, SAP, (with 1 customer – Newcastle) and Ramesys.

Inevitably the market may be viewed as being imperfect given the dominance of Tribal (SITS). However it has been getting much more competitive in the last five years which have seen the advent of Oracle, Peoplesoft and Campus IT making steady gains.

It would be unsurprising if further consolidation did not take place. The last few years have seen Tribal acquire SITS, Oracle acquire Peoplesoft (albeit world-wide), SunGard acquire SCT, and Aggreso acquire Distinction.

The next logical acquisition would be for another firm to acquire Campus IT which is the only remaining owner managed firm with a significant market share, either to develop that product suite or kill it off and replace it over time with the buyer's own system if that were feasible.

From Glasgow's perspective this is all good news, increased competitiveness in the market drives innovation up and prices down – enabling the realisation of better value for money that would not be possible in the absence of these factors.

In terms of setting a possible budget, further detailed work is required. However we would suggest that for preliminary planning purposes the university consider a provisional allocation of up to £10m over 5 years to resource the recommendations made in this review. This would encompass:

- New systems and implementation of same, up to £5m.
- Internal resourcing of process change and system implementation, up to £3m.
- Increased operational costs in support of running more sophisticated systems, up to £2m.

These figures are predicated on certain principle assumptions, including:

- The establishment of a full-time project team to drive both process analysis and system implementation.
- Full back-filling of internal posts during periods of secondment to the project with the costs incurred by the source department being funded by the project.
- The most sophisticated (and hence costly) SMIS being procured.

It is therefore a necessarily conservative forecast.

Nevertheless these are all preliminary estimates and further detailed work will be required to build a competent budget for the recommended programme of work.

The next section summarises the recommendations arising from the review.

6.0 Recommendations

This section provides a summary of each recommendation made in this report. These are listed in the order made in the report, not with regards to their relative priority or the most logical sequence by which they might be actioned.

Ref	Recommendation
Enquiry Handling	
1	Review and develop a business and market intelligence function
2	Conduct a process review of student enquiry management processes
3	Specify functional requirements for a CRM / enquiry / relationship management system within any wider exercise for determining overall student MIS functional needs (and taking into account such work that is in train with regards to reporting and analytical tools).
Undergraduate administration	
4	Conduct a process review of the full cycle of undergraduate student administration from the point of application to the point of alumnus
5	Specify functional requirements for an end to end SMIS encompassing all the core functional aspects of these processes
6	Ensure that within the work for (R5) above, certain functional requirements are prioritised in order to deliver the necessary business benefits, including; features that will actively support and enable proactive retention management, student self-service and flexible and configurable management reporting.
Graduate administration	
7	Conduct a process review of the full cycle of graduate student administration from the point of application to the point of alumnus
8	Specify functional requirements for an end to end student MIS encompassing all the core functional aspects of these graduate administration processes
9	Ensure that within the work for (R7) above, certain functional requirements are prioritised in order to deliver the necessary business benefits, including; features that will actively support and enable proactive recruitment, enable efficient admissions processing and provide the self-service functions described under 'Undergraduate administration'.
Governance and sponsorship	
10	Establish a change programme with executive membership. This programme will encompass both process change and system investment / procurement / deployment. It must have very senior sponsorship to supervise and drive the comprehensive programme outlined elsewhere in this report. It should be led by a senior academic.
BPA – key principles	
11	Initiate an overarching programme of business analysis. This should involve all relevant staff to enable the university to distinguish between issues and deficiencies in performance that: • Can be readily overcome by process change. • Can be satisfied by means of organisational change. • Can be met by means of staff development and training. • Require the deployment of some form of system to perform a function.
12	Make a senior member of staff accountable for the overall student administrative process.

System Management Information System	
13	System investment. The university must seriously consider investing in a modern off-the-shelf student MIS
Timetable and next steps	
14	Immediately initiate further detailed planning, establish preliminary governance structures for November 2006 and initiate the BPA by December 2006 for completion in February 2007.

Appendices

A Terms of Reference and approach

A1 Introduction

The University has successfully maintained and developed its own in-house student Management Information System (SMIS) since the Oracle MAC initiative.

This provides a robust and effective capability for the management and provision of services to students and staff and more recently has been further developed with the deployment of a web-based Registration facility (WebSurf).

Ongoing enhancement and development of the system is currently planned through 2006 and into 2007.

Beyond that point however, the University is concerned to ensure that it adopts an optimal strategy for delivering an effective SMIS – and in determining this strategy, consideration must be seriously given to moving partly or possibly wholly over to a commercial provided system. The capabilities of a future SMIS also need to be aligned with the University's own strategic plan ('Building on Excellence') and encompass the strategies for teaching and learning and research for the institution's development and growth.

Hence, the SRIP (Student Records Improvement Programme) Board has commissioned this preliminary study to set out the long-term vision for the delivery of student services for the university. The intention is that this report will inform decisions as to how the university should take forward the development of its existing SMIS.

This work has been overseen by a Steering Group drawn from the SRIP Board comprising:

- Sandy MacDonald Director of IT Services.
- Christine Lowther, Head of Registry.
- Frank Lynch, Head of Operations, Deputy Head of Planning Services.
- Khosrow Hejazian, MIS Director.
- Helen Macpherson, MIS Project Leader.

A2 Terms of reference

To develop a vision for student services that encompasses the processes of:

- Information management and analysis including the use of market / business intelligence.
- Promotion, marketing and recruitment including relationship management with prospective students, their parents / carers / sponsors.
- Support to existing students including all aspects of service delivery throughout the student lifecycle.
- Staff interaction with students for service delivery including all administrative and support services.

The vision should clearly articulate the primary internal and external drivers, express relative priorities and the action required for its realisation.

The report on the future direction of SMIS development will be the product of the gap analysis between the vision and the current and projected capabilities of the current SMIS and off the shelf products. It will encompass an analysis of:

- Existing costs and capabilities of the current SMIS compared to that of off the shelf packages.
- An analysis of these capabilities against the business requirements of the vision.
- Recommendations for the optimal strategy for developing future SMIS in light of this analysis.

A3 Overview of approach

Our approach has comprised:

- Consultation with relevant core staff within the University on the key components of a vision for student services. This has been my means of face to face interviews on either a 1 to 1 or group basis.
- An analysis of the extent to which the current internal SMIS and relevant off-the-shelf products might support the realisation of this vision. The latter element takes the form of a market capability review and will necessarily include examination of costs as well as functionality and underlying technology.
- An analysis of the extent to which the University's own business processes and organisational structure could support the realisation of the vision.
- The formulation of a gap analysis that clearly signposts where the vision would be supportable and by what means with a detailed assessment of any features that may not be supportable and why.

We have also draw heavily on our experience of working across 25 HEIs both in the UK and overseas to challenge current practice, stimulate discussion and prompt reflection.

A4 Consultee profile

The university did not require extensive or broad-based consultation and identified a core group of consultees, as listed at Appendix B.

A5 Information Analysis

The university provided a range of information that we have drawn upon including:

- The present strategic plan ('Building on Excellence').
- The Learning and Teaching Strategy.
- The Research Strategy.
- Recent papers to Court, SMG and Senate e.g. on Modularisation.
- The MIS strategy.
- SRIP Project and Programme Plans.
- Exemplar Faculty plans.
- Organisational structure documents.
- Current system development plans.

Appendix B Consultees

B1 Identification

The University concluded that given the strategic nature of the review, consultation would be focused upon a small number of key individuals. Individuals participated either through 1 to 1 interviews, or (as in the case of Faculty Secretaries) through group discussions.

Figure 1 Consultees

Name	Role/capacity
Jan Hulme	Academic Secretary
Christine Lowther	Head of Registry
Sandy Macdonald	Director of IT Services
Khosrow Hejazian	Management Information Services (MIS) Director
Prof Anton Muscatelli	Vice Principal, Strategy and Advancement
Prof Andrea Nolan	Vice Principal, Learning and Teaching
Frank Lynch	Head of Operations/Deputy Head of Planning Services
David Newall	Secretary of Court
Robert Fraser	Director of Finance
Caroline Mallon	Faculty Academic Administrator, Medicine
Debbie Goldie	Faculty Secretary, Arts
Helen Young	Faculty Secretary (Resources), Law, Business and Social Sciences
Iain McNeil	Faculty Secretary, Physical Sciences
Liz Wilson	Faculty Secretary (Academic), Law, Business and Social Sciences
Pat Duncan	Faculty Secretary, Engineering
Lynne Alexander	Faculty Secretary, Information and Mathematic Sciences
Prof. Stuart Reid	Dean of Veterinary Medicine
Prof. Noreen Burrows	Dean of Law, Business and Social Sciences
Prof. David Saxon	Dean of Physical Sciences
Sharne Procter	Director of International and Postgraduate Service (IPS)
Fiona Andrews	Director of Recruitment Admissions and Participation Service (RAPS)
Dr James Brown	Depute Director of RAPS/Director of Admissions
Shona Morrison	Students' Representative Council (SRC) President
Helen Speirs	SRC Senior Advisor, Policy and Training Officer
Dr Jack Aitken	Director of Senate Office
Helen Butcher	Senate Office, Assistant Director (Operations)
Wendy Muir	Senate Office, Assistant Director (Quality)
Prof David Watt	Professor of Computing Science, Senate Assessor
Prof Andrew Nash	Clerk of Senate
Fiona Duncan	Corporate Communications Depute Director
Helen Macpherson	MIS Project Leader
Anna Phelan	MIS Senior Analyst/Programmer
Alison McGuiggan	MIS Senior Analyst/Programmer
Prof Angus Laing	Head of Department, School of Business and Management

Appendix C Market Profile: UK Student System Suppliers

This market profile provides:

- An overall market commentary with regards to UK Student System Suppliers.
- Some detailed observations with regards to three suppliers presently active in the UK market, namely Tribal (SITS), Oracle and SunGard SCT.

Market commentary

Five years ago the range of solutions providers in the UK HEI market offered little choice to Universities. SITS, by specialising in the design and implementation of student management information solutions, had achieved market dominance (in excess of 60% of HEIs as customers) and whilst it was being periodically challenged by SCT its market position was never seriously threatened. Those Universities not using SITS or SCT either operated locally developed systems or often legacy products that were often derived from the Oracle MAC initiative.

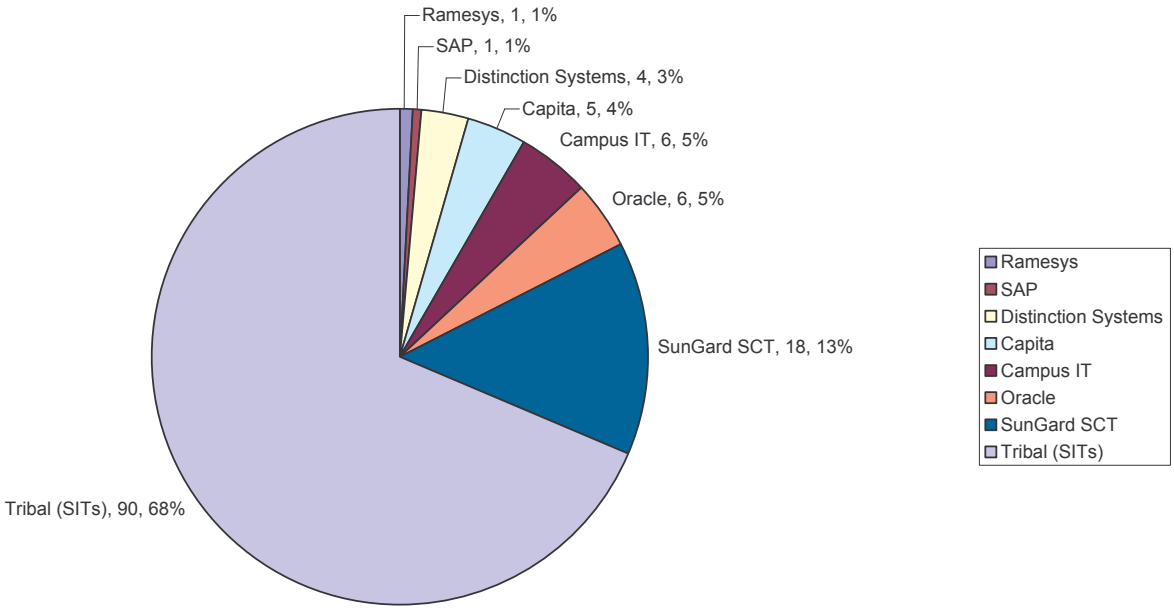
Since 2000 the landscape has slowly evolved. International ERP vendors such as Oracle and SAP have sought to break into the UK HE market by leveraging their considerable resources to rapidly design and test new student management information solutions, or as in the case of PeopleSoft localise a successful product from the US market. Their efforts have taken place at the same time as developments in technology have challenged traditional means of student system administration with the advent of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) solutions.

It has also occurred at a time when the overall number of HEIs looking for a new solution has grown as the need to modernise underlying legacy IS architecture has become acute and the ability of HEIs to design and build their own systems has diminished.

Growing competition in the UK market for both home and overseas students has required many HEIs to develop modern customer relationship management strategies and online channels for previously paper-based processes such as enquiry handling and admissions. This trend shows no sign of abating and maintaining ‘competitive advantage’ in the face of these developments is rightly one of the key drivers spurring Glasgow to examine its own requirements for such systems.

The overall effect of the ‘new’ suppliers on the distribution of HEIs supported by the different firms has to date been marginal. SITS (now part of the Tribal Group) have continued to grow their market share, maintaining their strategy as specialists they have not (to date) sought to branch out into the related areas of Finance and HR but have remained focussed on their core business.

SCT (now part of SunGard) continue to retain their number 2 position though as the Figure below indicates all of SITS competitors together have only just over 25% of the UK HEI market place with SITS own share now standing at approximately 68%.



It has taken over fifteen years for Tribal (SITS) to progressively achieve its market dominance. The cycle of system replacement by HEIs typically ranges from 8 to 15 years and Tribal (SITS) have shown that once embedded with a customer they are more than likely to retain that institution's business. Indeed Tribal (SITS) claim that they have never been ousted when bidding as the 'incumbent' supplier. Thus it is reasonable to conclude that SITS will remain the dominant supplier in the market place for at least the next 15 years – SITS recent acquisition by the Tribal Group in early 2005 reflects the latter's business strategy of acquiring and investing in market leaders in the UK education software market. The increased pool of investment from which SITS should theoretically be able to draw should assist its efforts to maintain its leading position in the market place by maintaining a robust modernisation programme of its core products as well as the development of more advanced CRM functionality and a 'Managed Services' capability.

Two of the international ERP vendors seeking to break into the market place are now one entity with Oracle having acquired PeopleSoft's worldwide business in early 2005. The former has had a mixed track-record in the UK HE market, achieving initially five new customers in the last four years including its pilot site Liverpool John Moore's University. However it has subsequently (and unusually) lost two of them before implementation had been initiated (these being Glasgow Caledonian and Northumbria).

PeopleSoft's success in the market place, with a shorter lead in time than Oracle, was more successful. It secured contracts with Cambridge, Manchester and Derby by persuading those institutions that it could deploy a localised product based on its US market-leading student system solution which would meet their needs. Feedback on the progress of implementation from these clients has been generally positive and Oracle can now lay claim to six UK HE clients for its student systems.

Oracle/CIBER UK has initiated a programme entitled 'Fusion' covering its full product range that will seek to build best of breed systems. It is currently intended that the Fusion student solution will be released in phases from 2009 onwards whilst the current products (OSS and Campus Solutions) will be supported until 2013.

In the UK both Oracle and PeopleSoft have shown themselves capable of beating the market leaders Tribal (SITS) and SunGard SCT. The basis of their success has usually been the greater flexibility perceived in their solutions compared to the market leaders with in certain instances aggressive discounting being used to secure competitive advantage – as would be expected as a commercial tactic when a firm needs to dislodge a market leader. If 'Fusion' does deliver the best features of OSS and Campus Solutions then it is likely to be a very competitive Product that will place SITS and SunGard SCT under pressure.

The acquisition of SCT by SunGard was intended to complement the other solutions for higher education which SunGard already offered. The strategy is clearly to provide greater integration between the existing product lines, and leverage the skills and expertise of staff across the entire company. If this strategy is successful, they are likely to become a more significant player in the UK market place.

Oracle (with their sole implementation partner, CIBER UK)

Market position

Following the Oracle MAC initiative in the 1990's (which whilst not achieving all its original strategic objective certainly advanced the modernisation of student systems in the UK), Oracle sought to break into the UK HE student system market with the Oracle Student System (OSS) product.

Oracle's first client with OSS was Liverpool John Moore's University (LJMU) which acted as their pilot site. Subsequently Oracle secured two other HEI clients in 2004, Imperial College and Oxford. Full implementation at LJMU (with what has proven to be a highly configured solution) was concluded in early 2005.

Oracle then acquired PeopleSoft's worldwide business in March 2005, thereby creating the world's second largest software house. Following the acquisition, Oracle include the PeopleSoft customers as its own, though it should be noted that these Institutions procured Campus Solutions, not OSS. Campus Solutions is regarded as a stable and functionally rich product, (though one requiring significant configuration and hence relatively large volumes of implementation consultancy due to its inherently flexible design).

This perception is backed by its success in the world-wide market and its recent success in the UK (Cambridge, Manchester and Derby).

The main concern expressed regarding Oracle/CIBER UK was its relative commitment to the UK HE market, due to the huge success already enjoyed in other markets. Since the acquisition, there has been no indication that there is a lessening of enthusiasm to penetrate the UK market and Oracle/CIBER UK has bid on all major opportunities.

Following the acquisition, Oracle established Project Fusion to integrate all the firm's products that overlap or address common customer requirements.

We understand that there has been little effort deployed to promote the OSS product in the UK in the last year and that as a result Oracle/CIBER UK consider it unlikely that further sales of OSS will take place beyond the installations that are already in place.

Unlike OSS, Campus Solutions is designed on modern web-standards and is totally web-enabled. OSS product is based partially on 'Oracle forms' and thus is not 100%

'web native'. Campus Solutions is the more sophisticated product and this is reflected in the sales strategy.

Furthermore, CIBER UK (Oracle's UK implementation partner) has stipulated that it will only consider proposing the use of OSS with a UK HEI where the customer does not require a sophisticated back-office function and the customer is already an existing user of Oracle's E-Business suite.

In terms of ongoing product support Oracle/CIBER UK has committed to support all pre-Fusion products until 2013. This includes PeopleSoft's Campus Solutions V8.9 and from late in 2006 V9 and the current V12 OSS product.

Oracle/CIBER UK have asserted that the 'Fusion' student system product will start to be deployed by Oracle/CIBER UK from 2009 with full functionality in place by the end of 2013, to coincide with the stated end date for support to existing system.

Oracle/CIBER UK has stated that it plans to develop 'Fusion' as a best of breed solution taking the most effective features of the OSS and Campus Solutions Products. However, several competitors have questioned how this will be achieved, as well as highlighting the potential implications of migration/upgrade to Fusion from the legacy systems.

Oakleigh Market Intelligence

Oracle has suffered from a mixed reputation in the UK HE market place, due in part to some difficult Oracle Financial and Payroll implementations. In light of this, it is important to distinguish between Oracle who sold the product and CIBER UK the implementation partner.

It appears that the relationship that UK HEIs have with Oracle with regards to the Campus Solutions student system is fine and the product itself is viewed as stable and highly configurable. Some issues have however arisen with CIBER UK and their responsibility for all UK statutory requirement localisations for the Campus Solutions Product (not the core implementation work).

There has been a tension due to a difference of opinion between several Universities and CIBER UK over what aspects of the requirements represent required UK localisations necessary and appropriate for a UK specification and what were deemed by CIBER UK to be customisations for that particular institution.

This issue, we understand, has now been resolved due to CIBER UK noting that the same concern had been voiced by several of their HE clients. However, there have also been concerns raised by other Institutions regarding the working style adopted by CIBER UK. Certain HEIs have felt that, in certain circumstances, CIBER UK have been "working to contract", rather than fully engaging with as a long-term strategic partner.

Also, several clients have commented that CIBER UK's communications are quite poor. This has been felt to be, in part, due to a change in some senior personnel within CIBER UK. One example of poor communication in the last year has been (reportedly) the relative\y poor quality of CIBER UK's supplier product presentations, which have done little justice to the actual potential of the Campus Solutions product.

Tribal (SITS)

SITS (Vision/e-Vision), based in Yorkshire, has been the leading supplier of student management information solutions to UK HE for over a decade with over 60% of market-share.

SITS have approximately 118 customers of which 90 are HEIs, 23 are FE Colleges, 1 is HEFCE and the remainder are overseas institutions. The majority of these

customers use the main SITS Vision student solution with a minority using one or more modules such as the Admissions system.

SITS was acquired by the Tribal Group in January 2005 for a cash and share options deal from the owners who were retained in a senior management capacity until earlier this year (both have now since retired).

The Tribal Group is a large UK outsourcing, consultancy and PR firm, operates mainly in the public sector with revenues of £229m.

Tribal has a reputation as a profitable and rapidly growing consulting and technology group. Acquisitions are usually made for owner managed firms that are particularly strong in their own market for a combined cash and share deal with a proportion of the value being remitted subject to the satisfaction of demanding performance targets over a 3 year business plan.

Thus SITS now form part of Tribal Technologies, the solution provider Division of the Tribal Group.

SITS avowed strategy is to continue the development of the student system product with a particular emphasis on CRM enhancements and to draw upon the Finance and HR capabilities of the Tribal Group to in time offer a full ERP solution to the UK HEI community. It intends to maintain its 'best of breed' product strategy and also intends to explore the UK HE market's interest in solution hosting and managed service provision.

Tribal also acquired FD Learning (formerly Fretwell Downing), which now operates as Tribal Technology, mainly in a consultancy capacity. FD Learning still markets its own student administration system, EBS, which has a strong presence in the UK FE market with 85 customers plus one overseas HE customer.

This three-way consolidation has both removed a competitor and strengthened SIT's previously weak resource base. One of the key aspects of the consolidation is that it appears to give Tribal (SITS) access to a very large resource pool. This, in theory, should allow for quicker development of the product suite. However, it should be noted that Tribal (SITS) does not have a reputation for investment in its acquisitions, so this is an aspect that must be tested with care in supplier discussions.

The firm's most recent new customers include Northumbria (which had decided not to pursue system deployment with Oracle), University College London, the University of East Anglia and the University of Surrey.

Vision is built with Uniface technology, which requires a technology refresh. With the advent of the ERP vendors some customers compare SITS unfavourably, particularly with regard to the relative modernity and flexibility of its core product.

We are aware that in part some HEIs have been concerned over the long term future of the firm, given the increasing proximity of retirement of its owner managers and in part based on the perception of SITS as being too comfortable with its position in the market place.

Oakleigh Market Intelligence

Tribal (SITS) are the dominant player in the market and as such have described themselves as the 'conservative choice'. By this they refer to their long-track record of working with the sector, their belief that they deep appreciation of the issues facing UK HE, and their strategy of securing and holding onto existing customers through effective customer service.

Whilst Tribal (SITS) does not have a strangle-hold in the market it certainly dominates the sector which by definition exposes its primary weakness - it is the obvious choice as a supplier given its hegemony. This dominance has led to the

general perception that Tribal (SITS) has less impetus to innovate and develop its market offering, due to its size and relative position. There remains a belief that Tribal (SITS) tends to follow market trends (rather than lead) and is less aggressive than some of its competitors in terms of development and modernisation.

SITS' reputation therefore is one of a solid commercial partner and in terms of implementation capability – a safe pair of hands. The Tribal (SITS) offering is regarded as a very stable system, but is certainly not the most functionally rich available, backed by a mature approach to implementation and development. Clients are generally satisfied with the overall product stability and have expressed satisfaction with overall product stability and the product knowledge of the implementation consultants used by Tribal (SITS).

In general clients have commented that the relationship with Tribal (SITS) was solid and that SITS thorough knowledge of UK HE was a great benefit. Tribal (SITS) have a broad and well-established User forum and maintain strong links to key organisations within HE (e.g. HEFCE; UCAS).

Tribal (SITS) also has a large and structured approach to user groups with a national annual conference, a national, regional and functional user groups.

There is a general perception that, from a technical perspective, Tribal (SITS) are relatively responsive and knowledgeable. The previous process of having a large number of hot-fixes and patches raised issues particularly around resource utilisation, however this is better controlled with a bi-annual schedule of major system patches.

Of note is that this supplier has very recently been selected by the University of Edinburgh.

SunGard SCT

Banner Student, SunGard SCT, is US based, and the world market leader (Gartner Group describe it as "dominant") with 60% market share, and 1300 clients in 29 countries. Since its inception in 1968 SunGard SCT has gone through several transformations, but in recent years has focused solely on education. During this period, through new development, acquisitions, and partnerships, SunGard SCT has increased their number of products and services. The company was formed by the acquisition of SCT by SunGard in 2004, joining together two companies with strong track records in their relative fields. Generally, the company has chosen to grow through acquisition, choosing to allow the acquired organisation to remain semi-autonomous.

The European and UK HQ is in Manchester, with another office in High Wycombe. They also have an office in the Knowledge Village in Dubai. They have 21 UK clients, all in HE, with two in Scotland: Paisley and Scottish Agricultural Colleges. They have recently won new business at the University of Ulster and Dublin Institute of Technology. SunGard SCT is currently the second biggest supplier of student management systems in the UK HE market.

Following the acquisition, SCT became the largest operating unit of SunGard Higher Education and Public Sector Systems. This is a specifically focused business group, comprised of higher education solution providers SunGard BSR (for fundraising applications), SunGard Bi-Tech (for fund accounting software), SunGard Collegis (for technical services and outsourcing), and SunGard SCT (for administrative and academic applications).The previous chief executive of SCT was retained reporting to the group chief executive officer of SunGard Higher Education and Public Sector Systems. This indicates that SunGard are following a similar strategy in relation to this acquisition.

The acquisition of SCT was intended to complement the other solutions for higher education which SunGard already offered. The strategy is clearly to provide greater integration between the product lines, and leverage the skills and expertise of staff across the entire company.

The general perception is the SunGard SCT offer a highly functional system with a good self-service offering. However, it has been criticised in terms of its CRM functionality in comparison to its main competitors. SunGard SCT does not have a CRM partner and does not presently offer this functionality as part of the core product.

Oakleigh Market Intelligence

SunGard SCT Higher Education and Public Sector Systems have a fairly variable reputation; there have been several favourable reviews and several less so. The company describe its customers as primarily Universities, 2 year colleges and 4 year colleges. This reflects its significant presence in the North American market. SunGard SCT has primarily a US locus, with a majority of its 1,600 clients being US colleges and universities.

Despite being the second largest supplier in the UK HE market place SunGard SCT has significantly fewer sites than the leading supplier in the market (SITS). With the size and scale of its overall operation, it would be expected that SunGard SCT would actively seek to increase its market share in the UK and in recent times has secured several new contracts (as mentioned above).

The view has been expressed by several UK HEIs that SunGard SCT has not made a comparable development investment in its core products in relation to their key competitors, particularly in areas such as CRM.

We are aware that SunGard SCT has stated that it is seeking to enter into a partnership with a suitable CRM partner to correct this deficiency which we view as an important priority if it is to provide an effective all round capability to the market.

In recent years it would appear that this supplier has had little success in growing its current market share.

Appendix D SMIS Implementation – 4 examples from other HEIs

	University A	University B	University C	University D
University characteristics	The University has approximately 18,000 FT and PT students. It has 4 faculties that manage all the key student lifecycle events and so does not have a traditional Registry function	The University has 25,000 FTE students comprising both FE and HE. The University has a semi-devolved structure with strong central core and support teams within Faculties.	The University is the largest in the Country by student FTE. It has 4 Faculties.	The University has approximately 21,000 students. The University supports a particularly wide range of learning pathways.
System procured	Campus IT	PeopleSoft Campus Solutions	PeopleSoft Campus Solutions	SITS (now Tribal)
Characteristics of implementation	All main modules installed based on v1.8 with elements of v1.6.	The 'vanilla' product was implemented wherever possible (i.e. minimal customisation) in order to achieve an accelerated implementation.	The implementation of the system has been characterised by significant configuration of the base product in order to gain as much benefit from the system as possible and ensure that it meets the University's requirements as fully as possible.	All key modules were procured. However, two functional areas for which the software has been bought have not been implemented to date and remain outstanding, these being Enquiries / CRM and Placements.
Date of system selection	Contracts were signed in January 2004.	The system selection was approved in December 2004.	Responses from suppliers were received in January 2004 and implementation commenced in late 2004.	An outline specification went to market in 2001.
Duration	2004 – 2006	2005 - 2007	2004 - 2006	2002 - 2005
Key implementation milestones	• March 2004 'Task Groups' established. • July 2004 – Basic Course information set up. • November 2004 - Admissions (UCAS and direct) implemented successfully. • February 2005 – set up all Modules on the new system and switched off Faculty spread-sheets and Access databases previously used for this. • March 2005 - Migrated all past student data from 1995 to date from legacy student record to the new student record. • February-May 2005 – Worked on and then activated the	University B adopted an accelerated 'big bang' approach to implementation aiming for deployment of the core student-facing functions for 2006/07. This timescale was required to secure the early operation of relevant student facing functions including student aid (bursaries and fees etc), e-commerce functions and other aspects that were prioritised because of the increasingly competitive market facing the university, and to avoid distracting staff in the run-up to September 2006. • Phase 1 from January 2005 – September 2005 encompassed student enquiries to cash collection plus	• Admissions installed successfully by autumn 2005. • Self service for applicants, and the student record and self service for students have gone live from August 2006.	• Admissions, Clearing, Student Self-Service, Modular Schemes / academic structures, etc were implemented. All key modules are satisfactorily operational and the project was delivered within budget and largely on time.

	University A	University B	University C	University D
	assessment module as a pilot for six early exam boards (excluding online functionality, this will be put in place in 2007). Piloting was necessary due to Faculty resistance to a full go-live without proving the system in a live environment. Full go-live achieved thereafter as a result of the successful pilot. • July 2005 – Clearing software. • September 2005 – enrolment and SLC. • September 2005 – HESA return. • November 205 – graduation. • December 2005 – certification. • Jan-March 2006 – DLHE return. • February 2006 – June 2006 upgraded the system to v 2.1. Thus far this has proved successful providing additional functionality, flexibility and sophistication in operation. • July 2006 – Enquiries module	the core financial processes. • Phase 2 is by end of 2006 to have in place online applications and budgeting.		
Next steps	The focus is now upon delivering the real 'value added' benefits of the new system such as online functionality much of which was not activated during implementation of the core product. The work of the team is still very much referred to as a project not least so as to ensure that Faculties recognise that much project work remains to be completed on maximising benefits from the system.	Phase 3 will comprise academic advisement, assessment, statutory returns etc. Subject to successful implementation of the current phase, the major challenges are around embedding sustainable process change and effective adoption of the systems functional potential. There remain some aspects of the finance system implementation to develop and fix.	The major challenges are around embedding sustainable process change and effective adoption of the systems functional potential which, though installed is not yet being fully utilised across the University. This is a benefits realisation issue and is being tackled head on with a specific appointment for this role and an emphasis throughout the project of embedding the necessary process changes.	The enquiries / CRM and Placements modules remain as 'shelfware', not yet implemented. In both instances this is because the functionality was deemed relatively lower in priority than the other modules. Resourcing constraints within the project team meant implementation could not be initiated as originally conceived and in the case of Placements, the relevant School (Health) had not prioritised the release of necessary resources to work on implementation. Enquiries it is felt needs to be given a real 'push' now to get the SITS

	University A	University B	University C	University D
				capabilities in place. Moving into the online self service world offers great benefits to students but University D now needs to tackle the systems integration issues that arise – both in terms of front and back end, as at present online self service is offered by the student system, the library system and a payment system and each has its own support systems in place.

Appendix E Outline Strategic Plan

Example high level implementation plan for the University of Glasgow based upon the defined target dates (in yellow)

	Action	Start Date	End Date
1	Business Process Transformation	Nov-06	Feb-07
2	EOI	Jan-07	Mar-07
3	Development of Functional Specification	Nov-06	Apr-07
4	Issue ITT		May-07
5	Set up specialist functional groups		May-07
6	Evaluate ITT, undertake supplier demonstrations and visits to other HEIs		Aug-07
7	Sign contracts		Sep-07
8	Agree detailed implementation plan		Oct-07
9	Agree training plan and training teams		Oct-07
10	Agree change management and communications plan		Oct-07
11	Set up test environment		Dec-07
12	Set up basic course information.		Feb-08
13	Set up all programmes and modules on the new system		Apr-08
40	Implement Enquiries (possibly with CRM depending on package)	Nov-07	Apr-08
42	CRM (possibly including enquiries depending on package)	Nov-07	Apr-08
43	Undertake Enquiries / CRM training as appropriate		Apr-08
14	Migrate all previous student records data (PG and UG) from legacy system to the new system		Sep-08
	Implement PGR Admissions handling		Jul-08
	Implement PGT Admissions handling		Sep-08
15	Implement Undergraduate Admissions for 2009 entry (UCAS and direct)		Oct-08
16	Complete Undergraduate Admissions training		Oct-08
17	Implement self service	Aug-08	Jan-09
18	Complete self service training		Jan-09
19	Develop interface into library system		Jan-09
20	Setup, configure and activate the assessment module within the system with initial focus being on PGT and PGR	Aug-08	Jan-09
24	Undertake assessment training (PG and UG)		Jun-09
25	Pilot assessment module for UG and PG exam boards	Mar-09	Jun-09
21	Develop interface into the timetabling system		Apr-09
22	Develop interface for CMIS room booking		May-09
30	Develop interface into HR system		Jul-09
23	Develop interface into financial system		Jun-09
27	Activate and test clearing software		Jun-09
28	Undertake clearing software training		Jun-09
32	Implement financial aid		Aug-09
33	Implement and test SLC software		Aug-09
34	Implement and test enrolment / registration software	Mar-09	Aug-09
35	Undertake enrolment / registration training		Aug-09
36	Implement and test HESA return		Aug-09
39	Undertake external reporting training		Aug-09
37	Develop interface to student card		Sep-09
38	Implement and test DLHE return		Sep-09
41	Develop interface into Alumni system		Dec-09
44	Implement and test certification and graduation module		Feb-10
45	Undertake certification / graduation training		Feb-10