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The assignment was to read the University of Glasgow's strategic plan, business case for new student information processes and systems and supporting information and to spend four days at the University talking to key staff before preparing a draft for an enhanced business case for presentation to Senior Management Group.

Meetings were held with the following key staff:

Vice Principal, Learning, Teaching and Internationalisation, Professor Andrea Nolan
Secretary of Court, Mr David Newall
Robertson Centre for Biostatistics, Professor Ian Ford
Academic Secretary, Ms Jan Hulme
Dean of Veterinary Medicine, Professor Stuart Reid
Director of Finance, Mr Robert Fraser
Director of International and Postgraduate Service, Miss Sharne Procter
Law, Business and Social Sciences, Faculty Secretary, Miss Helen Young
Head of Operations/Deputy Head of Planning Service, Mr Frank Lynch,

The Director of IT Services, Mr Sandy Macdonald, The Director of Registry, Mrs Christine Lowther and the Student Records Improvement Project Manager Mrs Janice McLellan, were available throughout the period for consultation.

A workshop was attended by:

Arts, Faculty Secretary Mrs Debbie Goldie
Engineering, Faculty Secretary Mrs Pat Duncan
Head of Learning and Technology Unit, Dr James Curall
Director of Research Strategy, Dr Karen Ness
Director of Recruitment, Admissions and Participation Service, Mrs Fiona Andrews
Depute Director of RAPS/Director of Admissions, Dr James Brown
Principal Adviser of Studies, Faculties of Science, Dr Iain Allison
Chief Adviser of Studies, Law, Business and Social Sciences Mr Fred Cartmel

The Director of MIS, Mr Khosrow Hejazian and the Student System Project Leader, Miss Helen Macpherson, discussed the current student system, future plans, and arranged demonstrations of software.

Mrs Bernadette Welsh, Registry IT Support Officer demonstrated BI query.

Given the amount of time available and the number of people to be consulted this was, of necessity, an exercise that looked broadly but without great detail.

There was, however, a clear consensus that current systems are not providing the facilities required now and significant improvement would be needed to provide the student services needed to support the strategic plan. The exception to this was the application 'WebSURF' which was developed to give on line facilities to students and advisors for course registration, personal information updating and disability monitoring. This system is seen as an unequivocal success by users, an opinion I agree with from my viewing of the system and discussion of its structure.

The areas where improvement is urgently required are generally seen to be:

Enquiry handling and monitoring and the application process in general. (where a CRM system would benefit greatly but improvement to the core system is also needed)

The presentation of information to prospective students, students and staff (where a portal could be introduced)

Student fee collection (where the system is seen as in need of upgrade, in particular to cope with new fee models)

A new course approval system (which is currently being planned, based on a Document Management System)

The introduction of workflow to reduce the administrative burden on academic staff in decision making (which comes as part of some commercial systems but which could, arguably, be obtained as part of the EDMS)

Overwhelmingly, the provision of Management Information was sited as an area in need of great improvement, in terms of the speed and ease of extraction of information and the accuracy and consistency of the information produced.

Information gained from discussions with MIS, and Registry IT lead me to the opinion that, while the underlying structure is typical for a student system of the Mac initiative era and has been shown to serve the purpose over many years, it has never been tuned to make the extraction of management information, especially by end users, easy and reliable. For example just a brief analysis confirmed the following issues which are indicative of a need to completely review the data structure:

1. No single data field is held for year of entry (although this is found by decomposing the matriculation number, not a recommended method for manipulating key data and possibly subject to error if the use of the matriculation number is not carefully monitored)
2. No distinction is made between the year of attendance and the curriculum year, so that e.g. a student repeating a year could be recognised as in different years of attendance and curriculum. Again this could possibly be constructed from the rows of the academic record table but is neither easy nor, possibly, reliable.
3. There is no facility to record minor changes to a course to create a new 'version', necessitating a new course code for any change and giving the potential impression that a student has changed course when they have not.
4. Changes made to the academic record during the course of the year overwrite the record, recognised to be an issue for only a minority of students but, none the less, a source of potential inaccuracy.

A more significant problem was noted whereby research students arriving mid-year must be registered for the remainder of the academic year and re-register at the beginning of the next year thus being shown as in 'year 2' of their course after possibly only attending for a few months.

I wish to thank the staff of MIS and record my positive impression of their dedication and enthusiasm for their system, and in particular the excellent work done on WebSURF.

However, in balancing what I have seen and been told I reach the following recommendations.

1. It is clear that current levels of investment and development cannot meet the requirements of the University, there are many outstanding issues and the University is behind its competitors, most of whom have already implemented, or are implementing new commercial systems.

2. The choice is between investing more in continued in house development of the core system, while building further facilities, possibly provided by packages, on this foundation and implementing an off the shelf commercial solution to replace the core system.

It is accepted wisdom that business systems such as Finance and HR/Payroll should be commercial packages. While in the past some have argued that Student Information systems are different, being more idiosyncratic, a brief survey of the actions of the majority of Universities shows that this opinion is losing ground (with seventeen out of the twenty Russell Group Universities already having implemented, or being in the process of implementing, a package solution).

Is the state of development of the Glasgow system such that it is in a relatively unique position where continued in-house development will be more beneficial than purchase of a package solution? In my opinion, it is not. The work required to bring the database up to the standard needed for good management information, and to cleanse the data, together with the re-development already identified (and there may be more identified if a more thorough analysis is undertaken), outweigh the effort to implement a commercial system. Implementation of a commercial package, even with an extended timescale to allow for process change, will deliver more widespread results faster than in-house redevelopment and allow the University to move forward faster on its strategic aims. What is more over a period of ten years in-house redevelopment is likely to be more costly than a commercial system, and support effort and cost thereafter will certainly be higher.

The argument was made to me that by developing in house Glasgow could have a system that is better than those of other Universities and gives competitive edge. I do not think this argument stands where the sort of standard facilities embedded in a commercial product, such as UCAS, HESA, are concerned. Better to use an off the shelf product to provide the standard facilities, and to use any development effort to produce any unique facilities that may be needed. It is not the core business of the University to develop software and it simply cannot, and should not, compete with major commercial suppliers who have money to spend on a constant R&D effort.

3. BI query is not adequate for the Management Information needs of the University, it is too restricted in its facilities and the underlying model requires too much intervention from MIS, whose resource is limited, to make it more useful.

The 'language' underlying all relational database query tools of this kind is SQL (structured query language), it is a tool usually used by technical staff rather than users. However, as a short-term measure you may wish to consider whether any of your users could be trained to use SQL, or whether a temporary resource with SQL skills could be employed. The advantage of this approach would be to alleviate some of your immediate management information issues and clearly identify where the underlying data structure is not capable of providing the information you need.

In the medium term it may be worth considering the use of a tool such as COGNOS, even before the introduction of a new package, however the limitations of the current data structures may cancel out any advantage gained.

4. It is important to recognise the success of WebSURF and to ensure that any replacement offers facilities that are at least as good, and in particular as easy to use, to ensure acceptance from the WebSURF user community.
5. It is important that the staff and management of MIS play a major role in any project to implement a new system.
6. Projects of this complexity require first-rate project management. To support the project manager you will need to put in place a working project board with members who understand their roles and give the time and commitment necessary to fulfil them. In particular the senior suppliers (from the external supplier, the technical side and the business side) will have a significant responsibility for the project. You may wish to consider training for these people if they have not been involved in a project of this nature before.