

Logins for Life

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Abstract

The University of Kent Logins for Life project, a JISC funded collaboration between the Information Services Directorate and the School of Computing addresses the needs of a University to engage with users throughout their lives. Historically, on-line services and identities have been provided by Higher Education, in most cases, only for the period during which study is taking place. The project attempted to foster a much longer online relationship with its users by permitting and facilitating the amalgamation of a users existing online identities into the University's information systems whilst maintaining security both for the user and for the organisation. This process allows prospective students to engage with the University without the need to create yet another username and password and minimises administration for the University. Social networking applications are ubiquitous nowadays and federated access management protocols such as OpenID and the service provided by UK Access Management Federation are also becoming much better known and their credentials accepted by many online services. The project explored how these technologies could be harnessed to develop policies and procedures for enrolling new users, for migrating them to fully enrolled members of the university and supporting them beyond their physical presence on campus.

The project also researched other online services which the University might provide to enhance the online experience at all stages of a persons involvement with the organisation and explored the difficulties associated with managing accounts for those members of the University who have multiple roles and therefore are required to maintain more than one digital identity. Investigation of current practices throughout the field of Higher education and from some sectors of the commercial world were examined to ensure our recommendations drew on best practice.

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Chapter 1

Recommendations

1.1 Introduction

What were we trying to achieve?

- A 'cradle to grave' digital relationship with all those who come into contact with the university.
- Integration with social networking tools (Facebook, Twitter etc) and federated identity protocols (e.g. OpenID, CardSpace, Shibboleth, SAML).
- Better ways of dealing with members of the university with multiple roles/identities
- An investigation of best practice in the sector.

Although the basic principles of the project have received broad approval from most stakeholders, detailed examination of the aims of the project revealed the complexity of the issues and a wide range of views as to where we should draw the line between the convenience for the user and the security of our systems.

The JISC Identity Management Toolkit defines some of the principles of Identity Management with particular reference to Higher Education. Obviously any changes proposed by the Logins for Life project needs to be developed within the framework of sensible identity management. The challenges in Identity Management are therefore also relevant to any proposals the project may consider. Some of these challenges which have particular relevance to the project are as follows:

- the number of individuals involved in the organisation i.e. thousands to tens of thousands
- managing the many different membership types
- providing a wide range of systems and facilities to support the wide range of activities undertaken
- controlling, as appropriate, access to systems and facilities
- overlapping responsibilities and systems – for example students may be associated with a course, department, school and faculty which may operate local systems

- allowing external users access to systems and facilities
- allowing users to access external systems and facilities
- providing a coherent user experience, particularly when users may have more than one role i.e. a member of staff may also be an alumnus enrolled on a masters course whilst applying to do a PhD on completion of their current studies¹.

The project found that the most difficult of these challenges to solve is how best to service accounts for users with multiple roles within an organisation. But perhaps this is in part because there is not universal agreement on what would constitute a solution to the problem. Not all stakeholders felt that amalgamating multiple accounts with associated permissions and access rights into a single account should be the goal of the project. Certainly users directly affected by the problem expressed frustration and found switching accounts onerous and time-wasting but it was also observed that the numbers affected were quite small and the level of inconvenience experienced was not excessive. Some managers also expressed a view that there were benefits in keeping roles and associated accounts separate as this served as a reminder to the user of the different responsibilities of each role.

An additional observation, though by no means restricted to this project, is that the rate of change in the fields of identity management and social networking makes it difficult to make recommendations that will remain current and relevant. Allied to this point and perhaps even more difficult to get a handle on is the shifting change in attitudes to social networking particularly amongst younger users.

1.2 A 'cradle to grave' digital relationship

There are distinct phases of contact between users and the university though these phases may overlap for some users, and not all users will be present in all phases. These can be summarised as follows:

- Casual Visits.
- Prospective Students and Staff.
- Visits by Members.
- Visits by Ex-Members.

This list is not exhaustive but covers the main types of visits that the project considered. There will also be visits by non-members on university business. There are other users of the website and IT services who may have short-term or long-term relationships with the university and these include contractors, external examiners, researchers, attendees at conferences and conventions and other guest users.

The project found that the level of service offered and the need for improvement to the quality of experience, varied within the groups and within the phases of contact. Plainly the main target groups will be prospective students, current students and alumni. We need to continue to attract high quality students - the university's main source of income (increasingly so in view of recent changes to funding and increases in student fees) – and to maintain contact with our alumni

¹See: JISC Identity Management Toolkit [<https://gabriel.lse.ac.uk/twiki/bin/view/Projects/IdMToolkit/WebHome>]

– from whom the university would also hope to receive donations. Ensuring students enjoy efficient, secure and relevant on-line services makes the attraction and retention of the other two groups tasks which are more likely to succeed and be productive.

1.2.1 Casual Visits

These can broadly be defined as visits not connected with study or employment at the university by a member of the public with no particular interest or affiliation with the university. This will cover:

- Visits to the website as the result of an internet search or from a link to a news item or blog page.
- Visitors seeking information about facilities and events available to non-members of the university such as entertainment at the Gulbenkian (Kent's on campus theatre), sports facilities, arts festivals and events within the School of Arts, part-time courses, open lectures, conferences and conventions, researchers from other academic organisations.
- Other casual visits

The project has focused on the needs of the prospective student, current students and alumni but it seems a reasonable assumption that similar principles could be applied to other users of the website e.g. those looking for information about public events. Although not perhaps greatly impacting on student applications or influencing decisions on post-graduate study or alumni donations there is a case to be made that, by association, a good website experience, whatever the reason for the visit will enhance the reputation of the university. The project was not able to identify any studies which explore possible correlation between social users of the university's and its partners' on-site services and the choice of institution for full-time or part-time study but there is unlikely to be a negative effect.

1.2.2 Visits by Prospective Students and Staff

These comprise visits expressly for the purpose of applying for or obtaining information about study or employment.

Prospective students may browse the website to look for suitable courses of study or seek information on Open Days. They may register to order a prospectus or download a PDF. Prospective members of staff may check the vacancies page and register to be informed of future vacancies, download information packs, apply online and track their applications. This phase will also include visits from prospective post-graduate students amongst whom will be those returning to study at Kent after graduating.

The quality of experience of prospective students and those who do study at Kent is highly likely to have an influence on the success of appeals for donations from alumni. It could be argued that key to this is the way we deal with prospective students. If the on-line experience of a person trying to make a decision about where to study is frustrating and inefficient in terms of time and information it seems likely it could affect the number of such people who will go on to apply for a place at Kent. Inherent in this argument is the need for the University to provide a rapid and accessible method of registration for those who do wish to register.

It needs to be considered that the average undergraduate will have browsed dozens if not scores of HEI (Higher Education Institution) websites before they get to the stage of actually applying for a place. Perhaps if the University of Kent, for various reasons is already high on the prospective student's list he/she will persevere with a less than perfect website experience but that cannot be taken for granted and we want to retain the interest of all those seeking Higher Education who come to the website. Some prospective students may not realise the range of courses and facilities that the University of Kent can offer and we need to ensure that this becomes apparent to them as rapidly and as efficiently as possible. The majority of students at Kent are under twenty five years old and most people in this age group will have grown up with the 'on-line' world. They are comfortable with information technology and are used to making choices based on their on-line experience. They expect interaction with a website to be speedy, smooth and efficient - not least if they are accessing the website via a mobile device. Therefore one of the main recommendations of the project should be that we improve the user experience of prospective students. Suggestions as to how we can achieve this include:

- Allowing users to register with Kent by using social networking tools such as Facebook and Twitter or federated access tools such as OpenID.
- Provision of some Kent website pages to registered users which give additional information about campus facilities, accommodation and the 'culture' of the university's student body. This could include a forum within which prospective students could ask questions of current students and compare notes with other prospective students. Decisions about which university to attend are not based purely on academic matters, for many people the demography of the student group, the physical location of the campus, the social facilities available, the university's standing in areas other than academic e.g. sports, music, nightlife can have a considerable influence on choice. It seems likely that information about these areas would have more weight coming from current students rather than from the offices of the university.

Links might also be provided to other sites which could provide useful information such as UCAS and independent Higher Education evaluation sites such as push.co.uk and the Student Room.

- Facilitating a personalised experience for users returning to Kent webpages after having registered. This could include personalised greetings, bookmarking or favourites tools, Amazon type suggestions e.g. other users who looked this page also looked at this other page.

Comprehensive data on the attitude of pre-Higher Education students towards the integration of social networking applications was not available to the Logins for Life project but colleagues in the Partnership Development Office did run some focus groups on our behalf. These groups talked to groups of ten to twelve school pupils in Year 12 or Year 13 about the process of registering and seeking offers for undergraduate study. The sample was not large enough to draw firm conclusions but did give an impression of the issues that might be important to prospective students.

Three groups were chosen from local schools. Two of the groups took a much more positive attitude towards the aims of the project than the third though there was a suggestion that the third group may have been somewhat 'led' by a particularly strong minded and vocal member. It was not clear that the respondents had a good understanding that they would not be sharing Facebook passwords with the university. As stated elsewhere in this report federated access management is not a concept universally understood outside of the identity management community. This is not to suggest we should ignore the objections raised and is in fact a very good guide to concerns that would need to be addressed should the recommendations of the project be implemented.

Overall the pupils were positive about being able to register using existing credentials (in these groups Facebook was the only social networking application regularly used) however they did have some reservations about the blurring of the boundaries between social life and academic life. Most of those taking part said they would accept reassurances that the university would not – indeed could not – get access to personal information they had stored on Facebook other than what they had agreed to at registration. However some stated categorically that they would not trust such a statement and for that reason would not use a social networking application to register with a university. Despite their ubiquity, the use of social networking sites to register with a more formal organisation such as a place of Higher Education, is not a procedure many prospective students will have experience of. In part this is because they will not have a great deal of experience in registering with any utility of service providers (many of whom may offer at least initial registration via SNS). Perhaps as a result of this some pupils expressed misgivings in using Facebook to register with a university as they ‘would not be confident that they had actually registered’ - the implication was that they did not trust that Facebook had the authority to broker this relationship. Some also questioned the motives a university might have in encouraging integration with social networking tools and saw it as an underhand way to ‘track’ what they were up to.

When it came to being able to access university information from within a third party application there were no such reservations with the majority agreeing that this would be convenient and practical.

The participants also very much welcomed the idea of a forum within which they could talk to, and ask questions of, current students and other prospective students. A lone objector did express fears that staff members could go on to these forums masquerading as students. Although ratings and course content were obviously major factors in their choice of HEI many said the views of current or ex-students of the institution were also deemed to be important. Allied to fears expressed that university staff would be able to view and perhaps be influenced by Facebook activity some voiced concern that conversations held on a forum might be seen by university staff and affect their chances of an offer. On the other hand many expressed frustration at being directed to yet another static website some of which were deemed not particularly informative and sometimes difficult to understand and preferred a conversation with real people.

The focus groups were perhaps most useful in highlighting some of the issues we would need to be addressed if the integration of social networking applications into university life was to be implemented effectively. Most users can perceive many benefits and would readily accept the concept of integration of SNS (Social Networking Software) if they were assured that they were not sharing personal information they wished to keep private and that there were safeguards and agreements as to what a HEI could do with any information they might get access to. This does present some difficulty as the prospective student target group by definition will not have had much contact with the university and hence there will not have been an opportunity to explain the concept of federated access and the limits of the data sharing taking place.

1.2.3 Visits by Members

This includes use of the website and other IT facilities whilst a member of the university, usually this means someone studying at Kent or employed by the university.

Extensive services and facilities are already provided to ensure the student at Kent enjoys a good experience when using Information Technology. Logins for Life is not specifically tasked with improving this experience but many of the aims of the project will be impacted by the experience the student has whilst at Kent. One of the main outputs of the project is the Linking Tool developed by David Chadwick’s team which will allow the holder of a Kent IT account to

link one or more existing sets of credentials from other applications to their Kent account. (See Section 3 of this document)

1.2.4 Visits by Ex-Members

Visits by alumni and ex-staff, after a period of study or employment has ceased. Users in these categories may have only a tenuous link with the university in that they occasionally look at the news pages or seek information about public events or they may be more active as members of alumni or ex-staff organisations.

Many HEIs are now providing or considering providing alumni email services. Kent has outsourced student email to Microsoft and alumni are provided with a `user@kentforlife.net` account. The account can be accessed from the Microsoft Windows Live page but there is also a link on the drop down menu of the university homepage and another link on the Student login page.

The Alumni pages of the Kent website do already feature information and services for alumni. The university should consider the creation of other alumni focused webpages in addition to the current ones which would provide added value and would be protected pages accessed by supplying a Kent log in (or via a previously linked SNS (Social Networking Software) see Linking Tool in section 3 of this document). Links to the Windows Live mail service (for alumni `user@kentforlife.net`) could be provided on all alumni pages (with links back to the alumni pages from the `kentforlife` webpage). Additional services which could be considered to encourage alumni to visit the website and log on might include an automated colleague contact service or a dashboard for administration of mail outs and for updates to contact details, announcement of marriages, births and deaths, etc.

1.3 Integration with Social Networking Applications

The project proposes that we integrate social networking tools and other third party applications with the university's systems in several ways. Some of the proposals could be implemented as soon as approval is given but other proposals will require further development. Increasingly the online population and particularly younger users see Social Networking Applications as not merely tools for entertainment and social communication but rather as sources of information, news, review, collaboration and much more. The University of Kent Information Services Operation Plan 2010/2011 recognises that SNS have a place in university life. Specifically the plan announces a future project which will 'Investigate appropriate Social Networks for gathering user feedback and promoting self-help'. Logins for Life proposes further development and integration of SNS based features and enhancements.

It is proposed that we allow users to register with Kent by using the credentials of a subset of authorised social networking applications and other third party applications. Currently the proposed list comprises Facebook, Twitter, Google, OpenID and the UK Access Management Federation. The university benefits from user registration as:

- it encourages users to provide a point of contact for follow up,
- it could make possible the use of cookies and other web technologies to personalize return visits to the website (e.g. use of names in greetings, reminders of courses which were explored on previous visits, a facility to set favourites or to compare courses),

- it may help to engender a sense of belonging to the community of the university
- it could remove the need for multiple databases to store the registration details of non-members wishing to comment on blogs, forums etc
- it gives us data which we can use to scale and improve the service we offer
- for the user, it avoids the creation of a new username and password and associated risk of forgotten credentials (which also impacts workload for the university).

Registration by the completion of an online form must be retained for those who do not wish to register with another application's credentials or who do not already have an account with one of the accepted applications, but Kent may want to consider whether to continue to provide prospectuses for download without registration. It is difficult to predict whether this would have a significant effect on the number of people downloading the prospectus and more importantly the number who go on to make an application to study at Kent. A good starting point would be to retain the registration free download but monitor the number of users who are registering using social networking applications.

It has already been established that use of mobile devices on campus, to access university services and information is commonplace and likely to increase². Allowing registration via an existing account has particular benefits for users of mobiles as the process can be carried out by 'clicks' and without entering any text.

To maximise the benefits of registration via third party applications it is essential that the university captures the email address of the person registering. Technically this is not difficult as the email address can be requested from the third party application during the authentication/registration process. For users of OpenID this is a familiar scenario. The user provides the OpenID provider details to the Service Provider and is then presented with a webpage from the OpenID provider showing what information is being requested and asking if the user agrees to this information being provided. Usually this information will include the user's email address.

It is recommended that the university expressly requests permission to store this email address and to contact the user by email in the future. Users must be given the opportunity to easily decline this request by the inclusion of check boxes or similar on the webpage and to edit the information if they choose to use an alternative email address. The university needs to operate in a transparent and sensitive way during the registration process and avoid giving the impression that we are harvesting email addresses for excessive or inappropriate marketing purposes.

It does need to be acknowledged that attitudes towards on-line communication have changed and follow up emails and reminders may not be seen as unacceptable intrusion if they are from a trusted source, are appropriate and not excessively frequent. There seems to be little reluctance to supplying an email address if that will lead to extra value (additional information, a forum, personalisation etc). The major social networking applications, and currently Facebook is the market leader, have achieved a high level of integration into all strands of on-line life with government websites, the National Health Service and the majority of on-line retailers, blogs, newspapers and magazines all displaying Facebook Like and Facebook Share icons. The University of Kent's website displays Facebook (and other SNS) icons on every page. An additional development can display a user's Facebook friends who have already registered at a site. This may be a step too far for some HEIs but peer approval can be a powerful incentive to explore further.

Despite the increasing acceptance of the 'intrusion' of social networking applications into work/study areas of life it should be noted that many still prefer to keep these areas separate. Throughout

²See: IS Smart Phone/Mobile Device Survey 2010 - Information Services - University of Kent, n.d., <http://www.kent.ac.uk/is/surveys/2010/mobile/>

society there is a distrust of large 'for profit' organisations. Some users worry that they do not have sufficient control over their privacy and worry that these companies will pass on their details to other companies resulting in spam and unwelcome targeted advertising. Additionally, stories in the press and on-line, involving bosses and even university staff punishing or dismissing students or workers as a result of inappropriate behaviour or statements learnt of via, for example, Facebook postings contribute to an atmosphere of mistrust. Many of these stories may be apocryphal but nevertheless the fear that these things can occur will make some reluctant to formalise a connection between their university and a social networking application.

In conclusion it is a fact that Social Networking Applications are increasingly accepted as another tool which can be used for marketing purposes as well as communication and entertainment. It is also true that this is a recent development and that things are evolving rapidly. Not all users of these sites object strongly to these developments and some see it as the price they pay for a free service. HEIs do need to keep abreast of these developments if their websites and on-line services are to compete in the competitive, attention grabbing world of the internet.

1.3.1 Accessing university on-line services and data via third party applications

A team from the School of Computing led by Professor David Chadwick have been developing an account linking tool to tackle the stated aim of the project to 'incorporate existing digital identities with our university accounts'. The development of this application is a 'proof of concept' and the Logins for Life team acknowledges that teams from other HEIs and from the private sector are also working on similar technologies. The recommendation is that the university does incorporate technologies which will simplify the authentication process for the user wishing to access data of a personalised but not confidential nature by either,

- allowing the linking of a Kent IT account to some nominated third party applications and hence allowing authentication via the credentials of these applications, or
- presenting the requested data, via an internal authentication procedure, as a secure feed to an app within a third party application such as Facebook or iGoogle.

With a view to achieving this the team recommends an investigation and evaluation of all suitable technologies and investigation of the experiences of other HEIs using these technologies and considers collaboration with other interested parties to achieve the stated aims.

1.3.2 School of Computing Account Linking Tool

Professors Chadwick's team have produced a working prototype of a tool which links a Kent IT account to third party applications and then allows authentication with that application's credentials. They plan further work to enhance the functionality and appearance of the tool which is described in further detail below.

The Linking tool achieves the project's aim to 'incorporate existing digital identities with our university accounts' by allowing the holder of a Kent IT account to nominate one or more applications with which they already have an account and to link this application with their Kent account. The linking (and unlinking) of these applications is entirely in the control of the user. Although accessing Kent on-line services with a linked set of credentials will provide a

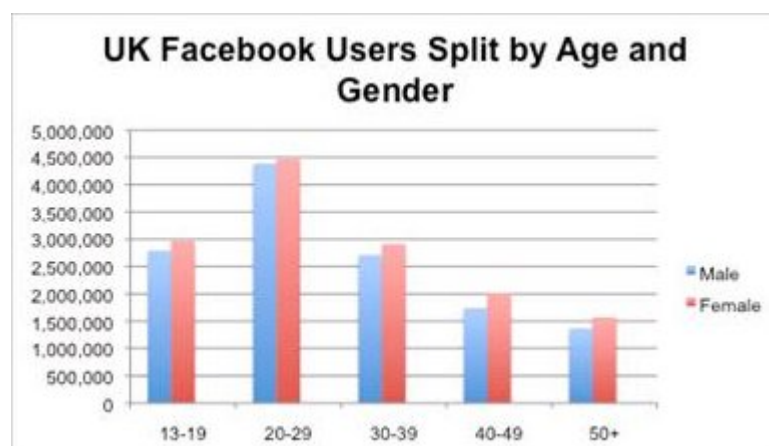


Figure 1.1: Source: Facebook Ads Platform, ClickyMedia

lower level of assurance³ than the main Kent IT account it is likely that this facility would prove useful to many users and in some circumstances improve security. In a public place, access to timetables, library loan and fines information and other personal but not highly confidential data will be available without the necessity to provide, and potentially expose to risk, the user's Kent IT credentials.

There seems to be no reason why this facility could not also be extended to current staff as well as current students but it is more difficult to imagine how this would prove useful. However enhancements and additions to the university website may change this situation in the future.

On graduation or retirement from the university a user, assuming their Kent IT account remained active could still make use of the linking facility in order to access protected areas of the website and possibly the email service if provided to that class of user - with their nominated third party applications. Recently, and over the last two years markedly, the demographic of social networking sites, in particular Facebook, has moved them away from being applications mainly frequented by the young (under 25s). Between April 2009 and April 2010 the percentage of Facebook users worldwide aged 25-34 grew by over 127%, those aged 34-55 grew by 328% and those over 55 years old grew by a remarkable 922%. This is not to suggest that young people will not remain the majority of users more that a 'catching up' is occurring as different age groups realise the attraction of these applications. An ability to access alumni pages through social networking sites may encourage alumni who have lost touch with the university to re-engage. There is no reason either to suppose at the moment that the current users of these applications will stop using them as they reach maturity. Figure 1 shows the breakdown of UK users as at August 2010.

Alumni already use Facebook to keep in touch and informed. A Facebook search for the keyword 'alumni' will reveal hundreds of pages dedicated to keeping alumni from universities and colleges all around the world in touch with one another.

Key to the usefulness of this tool is the matching of the level of assurance provided by the third party applications and the level of assurance required to access useful data on the university's systems. Plainly the value of a linking tool which gives access at a level of assurance too low to

³A level of assurance (LoA) refers to the degree of certainty that (1) a resource owner has that a person's physical self has been adequately verified before credentials are issued by a registration authority, and (2) a user indeed owns the credentials they are subsequently presenting to access the resource. (Stefan Wahe, David Wasley, *Appropriate Access: Levels of Assurance* — EDUCAUSE. [Online]. Available: <http://www.educause.edu/Resources/AppropriateAccessLevelsofAssur/162629>. [Accessed: 23-Feb-2011].)

allow the user to do anything useful is not going to be taken up by many users. Following on from this, if the university wished to implement the linking tool, it would be necessary to carry out an audit of current levels of assurance on the university's systems and to adjust these levels where necessary to ensure the linking tool does give access to useful information but does not breach the university's security guidelines.

Take up and continued use of the linking tool will be also be dependent on the tool's ease of use so careful design of the interface is essential. The tool must present what could be seen as a confusing list of options, in a way that shows the choices available in a clear and unambiguous manner. Quite properly, the computer and popular press regularly draw attention to security risks inherent in online working but this can create a disproportionate fear of some safe and useful technologies. Federated access management may not be a familiar concept to many of Kent's users—especially those in the first phase of contact with the university. It is important that users are able to access clear explanations of the flow of data that occurs if a linking service to link the credentials of social networking tools to their Kent IT credentials is used. Not all users will feel comfortable about linking say, their Facebook account with their Kent account, particularly in the light of regular press stories about employees having their Facebook activities monitored by the bosses. So we need to make sure users understand that they are not actually sharing their third party credentials with the university and thereby giving access to their personal data within that application. Similarly users will need to understand that they are not sharing their Kent IT credentials with the third party application. In the minds of non-technical users the distinction between federated access management and sharing usernames and passwords may be confusing but it is essential that this distinction is made clear.

The project's linking tool does offer to link to alternatives to social networking software, in particular OpenID. OpenID is a protocol which will already be available to many of Kent's users though knowledge of this fact, as shown by the online student survey⁴ carried out as part of the project, is not widespread amongst Kent's current users. User awareness does appear to be changing though. Recent surveys carried out by Mozilla Corporation on Firefox users showed that around 45% of respondents were using OpenID and another 12% were interested in doing so⁵. Choosing OpenID does have advantages for the user as it is not owned by any large commercial organisation and its design favours the user rather than the relying party. However this may also contribute to its lack of popularity amongst the relying parties. Facebook Connect and Twitter Connect are designed to by default provide more profile information than OpenID does so they are more popular with commercial sites. For OpenID to succeed it will need to raise its profile amongst the big players—Google, Microsoft, Facebook, Twitter etc and perhaps simplify its interface—but ideally without compromising its unique user-centric stance.

The linking tool must also deal with scenarios where a user is trying to access part of the Kent website which requires a higher Level of Assurance than that provided by the currently linked application. The Linking Tool simplifies this for the user as it prompts the user to provide suitable credentials by only offering applications which have a high enough LoA for the requested task.

The use of a linking tool such as that described does have the potential to cause confusion among some users though a clear understanding of how the tool works should mitigate this. Users will need to understand what access they will have from the level of assurance provided by the linked application and where presenting those credentials will not be sufficient or appropriate to gain the access they seek. In reality the effect on forgotten password request is not likely to be great as in most sessions a student will at some point need to present Kent IT credentials (to access online journals for instance).

⁴See: <http://www.kent.ac.uk/is/projects/loginsforlife/downloads/L4L-online-survey-analysis.pdf>

⁵Survey: Do You Use OpenID? Mozilla Labs 2009

1.4 Dealing with Multiple Identities

The project looked at how we can deal with users on the system who need to maintain multiple identities. A typical user case for this scenario is as follows:

John is a postgraduate at the University of Kent. He has a Kent IT account and lives on campus. In the evenings and at weekends, John helps out on the IT Service Desk. In order to access the systems and applications he needs to do this part-time job, John has a second Kent IT account as a member of staff. John has to log on using the appropriate account depending on which role he is in.

There are other scenarios where members of the university have multiple roles – there are people who work part-time in one department and part-time in another or who even have two roles in the same department.

In the stakeholder interviews⁶ carried out as part of the project, many staff members raised the issue of users with multiple roles. The team discussed how this type of scenario could be simplified and also spoke to other HEIs to discover how they tackled this issue. The ideal, in terms of the simplicity of being logged on in the correct role would be for there to be one digital identity with attributes for each role. Technically there is no real issue with creating digital identities like this but administratively it soon becomes complicated. In discussions with managers it was apparent that support for the single identity/multiple role model was not universal though most agreed that some aspects of the proposal were attractive and could save time. However, some managers also felt quite strongly that the dangers inherent in such a system were such that they would resist attempts to force this system upon their users. Although there can, in some roles, be a degree of inconvenience in maintaining more than one username and password, it was felt that there were significant advantages in retaining separate identities for each of the roles. The fact that the user had to log on as a different user served to remind that user that they were in a different role with different responsibilities and perhaps a different level of trust.

Other issues mentioned included concerns as to whether it would be practical for a central administration service to retain up-to-date and accurate local knowledge for each department; concerns that users would receive multiple copies of university wide email; concerns that the variety and complexity of some desktops would affect support issues and that security might be compromised. On this last issue it was mentioned that a single identity/multiple role account which was comprised was potentially much more damaging than a single role model as access to more data was likely to be possible.

Academic staff also valued having two identities when designing and editing Moodle modules as this allowed them to log on as a student to experience first-hand the additions and changes they made

A study⁷ commissioned by EduServ and carried out by the LSE concluded that the problem of users with multiple relationships giving access to different resources was neither widespread nor deemed serious by such users, in the field of Higher Education.

On balance the Project does not recommend that the University of Kent pursues a single identity/multiple role model but continues to monitor developments in identity management. It is possible that a compromise could be found in a tool which allowed simplified switching of roles like that seen on Windows machines for local accounts.

⁶<http://www.kent.ac.uk/is/projects/loginsforlife/downloads/L4Life-stakeholders-report.pdf>

⁷Multiple Affiliations Study, n.d., <https://gabriel.lse.ac.uk/twiki/bin/view/Projects/MultAffiliations/>

1.5 Investigating best practice in the sector

Lifelong identity provision in the context of this report and the Logins for Life project refers to an aspiration to create an online relationship with a user from first contact which might be, for a prospective student or even for a prospective staff member, whilst in Year 12 or 13 at school on through the time when a person is a member of the university and is physically present on campus, and beyond graduation or retirement until the user no longer requires or is able to maintain the relationship.

Although the continuation of some sort of online relationship with alumni is not unusual in higher education institutions, and much good work is done by Careers Advisory Services, often this is limited to static webpages and a mailing list. In recent years the development of alumni email services has increased. At the other end of a person's involvement with HEI, when looking for information about courses or job vacancies, there seems to be little on offer which makes the user experience more efficient or engenders a sense of membership. Where lifelong email schemes have been introduced they are usually for ex-students and retired or re-located academic staff only.

1.5.1 Alumni Email

A factor which has increased the viability of lifelong email provision in recent years – with obvious benefits for institutions and users – is the continuing increase in the number of HEIs outsourcing email. Outsourcing email is not a new concept and some HEIs went down this road some years ago – however outsourcing did not always reduce costs and as these services were often priced on the number of accounts, the amount of data storage and the longevity of the data, exploring the idea of email provisioning beyond the study period was not high on the agenda. Outsourcing to organisations like Microsoft and Google is now seen to be a relatively low cost option and can offer other benefits to students and institutions beyond an email service. Web apps and instant messaging and useful amounts of secure online storage (in addition to email storage) often feature in the additional services bundled with alumni outsourcing packages. These changes in the market, have encouraged many Higher Education Institutions to consider whether the reduced costs of email provision make offering email to alumni, a viable proposition. Indeed it can be assumed that, where university email has been outsourced – and Google and Microsoft have the lion's share of this business - the providers would prefer for an email account to persist beyond the period of study. It is only after graduation that the providers begin to target the users with advertising and a good email service helps to produce a brand loyalty amongst users.

Well drafted service agreements are essential both between the HEI and the outsourcing party and between service users and the academic institution. There are also legal issues to be taken into consideration particularly if alumni email addresses take the same form as those provided to current university members i.e. GraduateName@kent.ac.uk. The JANET (Joint Academic Network) guidelines⁸ on alumni email addresses recommend that HEIs do not retain this form of address but some organisations have done so.

Redirection Service

The simplest alumni email solution provided by some Universities is a redirect only service (e.g. Oxford University, Aberystwyth University and others). The user can continue to quote his or

⁸JANET factsheet - Email Addresses for Alumni. <http://www.ja.net/documents/publications/factsheets/081-alumni.pdf>

her email address as either their student email address or an alumni email address depending on the local arrangement in place and this is forwarded to a private email address such as Gmail or Hotmail specified by the user. Many HEIs allow alumni to receive mail to their student email address but outgoing mail is sent from the alumni account. A disadvantage of this system is that over a period of time, as alumni change their providers and as a consequence, sometimes their email addresses too, the success rate, based on the existence of a working contact point, starts to drop. The advantages are that, whilst the redirect to the user's current main email address continues to succeed, the chances of messages from the HEI being at least seen are high.

The costs for this sort of provision can be very low - especially after the initial seeding of the forwarding tables but as the tables become inaccurate over time increasing staff hours are required to chase up changes of address. Providing a forwarding service may reduce the issues around the use of a valid ac.uk email address as proof of entitlement for discounts or even provision of services (see below). It is anyway debatable as to whether using an email address as proof of entitlement is a reliable method.

Full email service (in house)

Other universities provide a full email service with storage. The service offered can be free or tiered to provide additional facilities or storage on payment of a fee. Some establishments offer an initial period (usually three months) during which the service is provided free and then introduce annual charges.

Consideration needs to be given to naming conventions for alumni accounts partly because of the legal and association factors (see below) but also because these addresses may persist for many decades. Whereas in the past, after a reasonable period it may have been considered acceptable to recycle account names, with the provision of alumni email this becomes more complex. Retention of the username and change of domain name (e.g. jsmith99@hei.ac.uk mutates to jsmith99@hei4life.ac.uk), will mean that the jsmith99 username cannot be recycled until the demise of the alumni holding the alumni account name jsmith99 to avoid the formation of a duplicate username as graduation follows and a new alumni account is created.

Outsourced alumni email provision

Outsourcing HE email services has an added incentive in that the service can persist after graduation, and currently with some of the large providers at no or minimal contractor cost. There will be costs to the organisation as a database of alumni email addresses will have to be maintained and for some organisations, other directory entries (LDAP, Active Directory etc) will need to be maintained. It should be borne in mind that for several decades the number of accounts required for alumni email will continue to increase at not much less than the number of graduations per year from that HEI. In the case of the University of Kent that currently amounts to around 4000 new accounts each year. There will be some each year who, for various reasons no longer require accounts but these numbers are not expected to form a large annual total until the first group of alumni provided start to reach their seventies or eighties. Organisations deciding to provide alumni email will need to devise procedures and policies to check periodically whether the services they provide are still being used.

Some organisations have chosen to keep email services in house for current staff and students but have outsourced the provision of alumni email. A leading provider in this field is Aluminati Networks Ltd. Aluminati will provide a simple redirect service or a full email service with send/receive, calendar, address book etc. The model usually adopted by UK universities outsourcing alumni email to Aluminati is that on graduation alumni are given a basic lifelong

redirect service for free with a three month free trial of the enhanced service after which there is an annual fee. The full service allows migration of email messages and address books to the new service. The full email service offers webmail and POP (Post Office Protocol) facilities and an optional range of other services such as community forums and personal HEI branded webpages. With the big players like Microsoft and Google now providing similar services for free or a very low price, the smaller specialist alumni email providers are going to need to add value to their chargeable services if they are to survive.

Forms of email address and other considerations

The form of email address which persists after graduation varies. Some establishments, for instance Royal Holloway College, allow alumni to retain the same email address they have had throughout their studies e.g. `username@hei.ac.uk`. Others are reluctant to allow this. There are concerns around the implicit authority or 'gravitas' that this form of address provides and the fact that the provisioning HEI may no longer have any control or sanctions, barring recourse to a legal intervention, over the user of the address. In a worst case scenario, abuse of an `@.ac.uk` address could result in an organisation blocking all mail from that domain. Additionally some software/online resource providers with agreements with academic institutions use an `ac.uk` address as proof of eligibility for reduced fees or access to resources. Further advice from JANET on the legal and other implications of alumni mail provision can be found in the JANET alumni email addresses Factsheet⁹.

An organisation providing alumni email will need to draw up policies and procedures for its use, decide and publicise limits on mailbox space and adopt a policy for checking that an account is still in use. The overheads for provision of the service – even though they may not be large – will continue to increase year after year for some decades until the point is reached where the demise of users in a given year matches the number of new accounts created in that same year. This overhead should be set against the reduction in time and effort needed to maintain an up-to-date list of email contacts though there is no guarantee that provision of even a free email service will result in its continued use.

For alumni, retaining an email address under which they may have published research papers means direct contact from individuals and organisations interested in their field of research is maintained. Redirection from the user's original academic email address to a new address will also enable continued contact.

Where full email service continues to be provided, some organisations furnish their users with a specific form of address which although still identifying the user as a one time member of the university also reflects the user's current status. For example, `jane.doe@someuni.ac.uk` would become `jane.doe@alumni.someuni.ac.uk`. Queen Mary's University in London allows alumni to have an email address in the form of `username@alumni.qmul.net`. Current Kent students will see their `kent.ac.uk` email addresses change to `kentforlife.net` addresses but with a redirection from their student addresses. The `kentforlife` brand may not be initially associated with the University of Kent but over time this may change.

Given a choice, it seems clear; most alumni would prefer to keep an email address exactly as it was when they were members of the university or college. It is unlikely that many higher education establishments will decide that this is an acceptable policy however an alumni address with a redirection from the user's original student email address would seem to be a good compromise. How much weight the possession of an email address which identifies the owner as a current or former member of a university is hard to establish. In terms of adding influence to a prospective employer's ranking of a candidate there may be some value. However, the development of

⁹<http://www.ja.net/documents/publications/factsheets/081-alumni.pdf>

alma mater branded personal development/e-portfolio tools like Mahara, to which a prospective employer can be given access in order to view resumes and portfolios, will mean that alumni have a more straight forward way to declare their association with their former college or university.

HEI's considering alumni email will need to decide on how they define an 'alumni'. Is this confined to members of the university who have successfully completed degree course or does it include those who left before completion? Is the reason for leaving of any relevance? Are there exceptions to the rule, exchange students for instance, who the organisation may wish to encourage to remain in contact.

Email Use Cases

Drawing up practice and procedures for the lifelong provision of email at HEI's is a complex task with many variations in the way customers interact with the institution. There are many different ways in which contact between a university or college and its customers may present over the life of the customer. Some relationships will be relatively brief and uncomplicated. As in the following use case:

In her late teens a young woman becomes an undergraduate, studies at the college or university for three years, graduates and becomes an alumna, ending direct physical involvement with the institution, save for a reunion or two.

Other use cases are more complex:

A young man begins his undergraduate study at a similar age, runs into financial or personal difficulties two years later and decides to defer his final year. One year later he returns to finish his studies and continues on to graduation. This is followed by three years working abroad when his status is that of an alumnus. He then returns to the UK and chooses the University of Kent for postgraduate study and spends three years getting his Masters. In his final year he takes on some part-time lecture work and eventually succeeds in getting a full-time position lecturing at the university.

The first use case presents no problems. Whilst studying the user has a standard student email address and on graduation this is converted to the alumni form with a redirect from her original student email.

The second use case will present difficulties in using the model whereby, on becoming an alumnus the user's email address changes. The Logins for Life approach aims to provide a user with a simplified path through their involvement and relationships with a Higher Education establishment. Currently, this becomes problematical if a person leaves the university, and so has an email address which reflects this e.g. `jsmith@alumni.orgname.ac.uk`, but then returns in a different role. The options are to convert the user's email address back to a form which is in use by current students or staff or to create a new email account. The former will mean that forwarding services will need to be reconfigured and the latter that redirection services will need to be put in place when the person eventually finishes study or employment again. In the model currently employed by University of Kent, both the student email address and alumni email address co-exist at all times — the direction of the redirect and the fact that only one address can originate mail determines which is current.

A trial of alumni email provision was started in Kent in 2009 and the recipients of this service were surveyed in 2010. The survey found that only around 3% considered the service to be of

no or very little use to them. Over 60% of account holders checked their mail every day and the comments from these users were almost unanimously positive. Unsurprisingly the number of ex-students for whom a valid email address was on file in the alumni office at the end of the year was very high compared to previous years before the provision of alumni email.

1.5.2 Other Alumni Services

The provision of other services to alumni requiring some form of authentication is currently much less common amongst UK HEIs. One establishment where this has been successfully introduced is the University of Edinburgh. Edinburgh actually provides facilities to logon to the university's website from an early stage in the customer's relationship with Edinburgh.

Edinburgh uses a web log in facility called EASE (Edinburgh Authentication Service). EASE uses the open source Cosign web authentication software which provides a single sign on to the university's online services (including email). Cosign in turn meshes with the Kerberos authentication protocol.

At the UCAS application stage a user is given a username and one time registration password which will enable them to create an EASE account with a password of their choosing. EASE is also available to all staff, alumni, associates and visitors. All online services throughout the university are required by local policies to use the same username. The EASE account can be used by current members of the university to log on to the student portal and from there a transparent logon is provided to other services such as WebCT (Edinburgh's VLE (Virtual Learning Environment)) and PebblePad.

Once a user has an EASE account that account will persist throughout the user's period of study or work at the university and beyond for ex-staff and alumni. Access to services which the EASE log on permits is controlled by attributes which will change as the user's relationship with the university changes. An additional facility for current staff and students provided by EASE is that it can be used to protect 'personal' Edinburgh University hosted webpages to restrict access to EASE account holders or even to individual account holders.

1.5.3 Establishing an On-line Relationship at First Contact

The Logins for Life project is also considering how an online relationship can be established with its potential students and staff before they become a member of the university. The first interaction most interested parties will make with a HEI will be through a website — usually to request a prospectus. Even then, many institutions (Kent included) allow the free download of prospectuses in PDF form without the need to register. In all cases reviewed, where users are required to register, this was by filling in an online form. Generally this creates an entry in a database and does not create an account — in other words there is no username associated with the record. This method does allow an organisation to follow up an enquiry or offer further information. It does not facilitate communication in the other direction as the user must identify themselves again by giving surname, forename, date of birth etc. Some HEI's do create an account at this stage which, usually after email verification, will provide a user with a username and password which can be used to ask for follow up information or to book a place on open day.

An increasing number of commercial on-line organisations and social networking and blogging sites provide alternative methods of registering using an online identity which the user already owns. These methods are quicker and simpler and therefore make the user more likely to complete the registration process. This has benefits for the users as follow up enquiries are possible and

access is often granted at this point to additional facilities or secured areas of a website. It may also create a sense of membership or belonging and in turn engender loyalty to the 'brand.' For the organisation, the user is contactable with personalised communication. Additionally it avoids the creation of a new account credentials for the user necessitating the retention of another username and password. It can normally be assumed that the service provider with whom the third party identity resides will have already verified the user's email so that stage of registration, with the inevitable delay, can also be avoided.

Commonly the existing online accounts that are accepted for registration are OpenIDs, Google accounts or many of the social networking sites such as Twitter or Facebook. These methods do not appear to have been adopted by any UK HEIs at the time of writing.

There are risks inherent in allowing registration via third party applications but these can be minimised by a careful audit of services and web pages to ensure that an adequate and appropriate level of assurance is required. Persons registering with third party applications will not have been authenticated by the university in a conventional way such as by presenting a passport or other form of official identification however the level of risk this present is low. Without email verification we cannot confirm that any email address provided is a genuine and valid one. However the potential harm caused by this is minimal. At this stage the university is only likely to be sending out prospectuses and perhaps follow up emails. Additionally where a popular social networking application such as Facebook or Twitter is used to register there is a reasonably good chance that an email address 'harvested' from these applications will be a genuine one as most users would want to receive mail from their Twitter or Facebook account.

Where HEIs have adopted some sort of initial registration procedure this is usually a temporary account only in use prior to the user becoming a member of the university. At that point an account will be created on the student data system and a new username and password is issued.

As mentioned earlier Edinburgh University use a different model and a user is encouraged to register as soon as they have made an application through UCAS. The username created at this point will persist throughout a user's relationship with the university. On graduation the user retains access to the account. Edinburgh does not currently provide alumni email but is examining the possibility of using a third party supplier to handle this in the future. The email address will be different from the ed.ac.uk address of a current member of the university. Access to university systems obviously changes when a user converts to an alumnus but there is still access to some restricted areas. Policies are in place for determining who qualifies as an alumnus — primarily someone who has completed their studies though students on a European exchange programme are also classed as alumni. A period of grace (150 days for students, 240 days for post-graduates) is in place before access to the full range of university systems is cut off.

The barrier to a completely smooth transition from interested browser (prospective student) to full university account holder is perhaps the UCAS application process. The application to UCAS will usually be after the interested party has already sought information, and perhaps downloaded an application form, from the university website. The UCAS application involves registration with UCAS and the applicant will be given a ten digit identification number. The identification number becomes part of the student's record. If we are to encourage applicants to register on first contact with the website we need a way to match up that initial account with the full Kent IT account that they will be supplied with when they eventually become a member of the university. Either we need to convert the initial account - which in most case will be an OpenID, Facebook, Google or Twitter account - to a full Kent IT account or we need to provide the linking tool and instructions for its use so that the new student can link the originally created account to the new Kent IT account.

The linking tool developed by the School of Computing will to an extent, solve this problem in that the account created at registration using the credentials of a third party application can

be linked to a Kent IT account. However the low level of assurance provided by the linked application will necessitate the provision of Kent IT credentials for some services and restricted areas of the website.

1.5.4 The commercial model

HEIs need to learn lessons from the successful online stores and service providers if they are to achieve the levels of customer satisfaction likely to be needed to encourage high quality students to want to study on their campuses. With student fees now set to rise, potentially by large amounts, the need to be efficient, convenient and customer focused is greater than ever. Students increasingly see themselves as customers and want value for money. Internet savvy customers — which the majority of our prospective students almost certainly are — form opinions very quickly and this in part is dependent on the quality of service they get from a website. The number of individuals who follow their initial interest through to registration will increase if the process is rapid and easy.

The current model at Kent and many other UK HEIs is not one which would be found on the website of a successful online store. Obviously a university is not an online store but we can learn from the business practices we encounter there. Imagine if when trying to purchase from an online bookstore the user having registered with the site to browse the books on offer than had to re-register, providing many of the same details again, in order to make a purchase. Asking for additional information as a relationship develops, or to confirm a financial transaction is of course acceptable but the current experience of a prospective student from first contact to claiming an IT account can be at very least frustrating and repetitive.

The project examined the websites and registration procedures of several large commercial organizations including Amazon.com and Google.com. The business model for these organizations is of course different to that of HEIs but nevertheless there are ideas here which could be adopted. The registration procedures for many of these organisations are simple and consistent and a single log in usually - though not always - provides access to all the services the organisation offers. Where this is not the case - for instance if additional terms and conditions are necessary - the re-confirmation procedure was quick and simply with fields automatically populated with personal details wherever this was possible.

An additional complication with registration and subsequent application for higher education is that applying for study at a HEI does not usually solely involve the chosen institution. In the majority of cases, particularly for under graduate studies, UCAS (Universities & Colleges Admissions Service) will also be involved. This presents a barrier to a smooth transition from initial enquirer to a fully provisioned student — though not an insurmountable one. In order to progress this it would be necessary to enter into a dialogue with UCAS and with other interested parties to agree on data flows. If an individual HEI creates an account prior to the prospective student applying to UCAS there is currently no easy way to tie up this account with the unique reference number issued by UCAS. Unfortunately this is exactly what the Logins for Life project wants to happen. This document does not propose to give a detailed examination of the way forward on this but one suggestion would be that an application to UCAS originated from a HEI website might pass a unique token to UCAS which would be passed back to the HEI after processing as part of the transfer in of data prior to acceptance/rejection by the Admissions Office.

1.6 Risks

A more extensive discussion of the risks and benefits of the project's proposals can be found in the Logins for Life Business Case document. The main points are repeated below.

Any modification to the university's on-line systems which results in easier access to previously unauthenticated users will increase the security risks. However because this class of user will only have access to areas of the university website which are rated as requiring a low Level of Assurance the consequence of a breach of security would not be expected to be critical.

One of the benefits of adopting the Logins for Life proposals is that we expect to increase the number of prospective students registering at the website. Accurately forecasting the extent of this increase is difficult. An exponential increase may have considerable impact on the administrative workload and similarly if a high percentage of the 'additional' registrants request hard copies of prospectuses there could be an impact on printing and postage costs. This may be recouped in additional tuition fees but verification of this will not be available for some months.

Supplying interactive facilities such as forums brings with it increased administrative pressures and an increased risk of offensive or libellous posts. Decisions on what level of moderation, and at what point this should occur need to be taken and consequent increase in workload will be a factor in this.

Alumni email services provided by a third party — currently Microsoft — brings with it some risks as the decision making is no longer completely in the control of the university. Changes to contracts are inevitable over time and, although it currently does not seem likely, it is a possibility that Microsoft may withdraw from this sector of the market in the future or change terms and conditions or charges in such a way that the university may no longer wish to use them as a provider.

The assumption is, from the project's point of view, that the incorporation of self-authentication protocols via the use of social networking and other third party software will be seen as benefit by most of our prospective users. However it should be considered that not all users may welcome this change. The recommendations stress that the university must continue to provide other methods of registration, such as by completing an online form, but it is a possibility that a small percentage of users may be discouraged by these changes to the registration process.

1.7 Conclusion

The project concluded that much can be done in the areas of engaging our target groups from a time before they become students or members of staff and continuing on beyond graduation or retirement. Technologies exist, and have been added to by the work of the project, to enable the integration of social networking and other applications into the university's systems. Social Networking has become ubiquitous in the lives of internet users throughout the world. As this report is being written in the spring of 2011, governments are being overthrown and popular uprisings are taking place in several Middle Eastern countries. There are very credible reports that these events have only been made possible by the use of social networking applications like Facebook and Twitter.¹⁰

In societies where these momentous events may seem far away it is easy to dismiss social networking as belonging only to the worlds of entertainment, of gossip and of the background

¹⁰Egypt's Facebook revolution <http://huff.to/gdyjCQ>

chatter of the internet generation. The conclusions of the Logins for Life project suggest that to dismiss or marginalise social networking like this would be a mistake and that many users of these applications harness their power to turn them into multi-purpose tools which are indeed entertaining and can be frivolous but are also sources of information, forums for serious discussion and are used to disseminate all forms of information to huge numbers of people with great expediency. They are also extremely convenient and for many of our main target group, young people thinking about Higher Education, ever-present. This ubiquity and the fact that many people check these applications at very regular intervals suggest that to ignore their possible use in the field of Higher Education would be to underestimate their reach and power.

The above is not to dismiss valid concerns over the blurring of the boundaries between education and social life. Concerns over security also need to be given a great deal of consideration. But these areas do not constitute reasons to rule out the use of these tools if they are embraced with appropriate and robust security protocols and with clearly stated policies and procedures on their usage. The account linking tool developed by the School of Computing demonstrates a viable method of integrating social networking and other third party applications into our networks without comprising the security of our systems.

Turning to alumni engagement, the integration of social networking technologies again has benefits. Usage statistics show that the growth of the use of applications like Facebook in the more mature user groups has been rapid and extensive in recent years. This along with other services, such as alumni email, can do a great deal to help maintain contact with our alumni as they progress through their careers and scatter across the planet. Which in turn makes fund raising less arduous for administrative staff and perhaps also raises the university's profile and reputation and thence increases the likelihood of successful campaigns.

In the area of dealing with members of the university with multiple roles, the project was not able to point to a clear solution to the inconvenience such arrangements can present. This is not so much down to the lack of a technological solution but more to the unsatisfactory consequences of simply combining all roles into one user account. The project did however establish that though problems and frustrations do result from the necessity to give staff and students with multiple roles more than one account, the number of individuals so affected was small and the consequences were not seen to be serious or to have a discernible effect on productivity. Some even suggested that retaining the current arrangements did in fact have benefits which outweighed the inconvenience.

Any changes which involve a redesign of existing systems and security audits to assess the effects of these changes will of course have a not inconsiderable cost attached. Other costs will also be associated with increased numbers registering at the website and a much greater number of email accounts. However the benefits which will likely be seen as a result of such expenditure and the potential loss of revenue that may occur if such 'investment' does not occur put the costs into a perspective that makes these enhancements worthy of serious consideration.

Chapter 2

Business Case

2.1 Introduction

The Logins for Life project aims to improve and extend the relationship between the users of the University's IT systems and the University. For the University to thrive in an increasingly competitive market we need to:

- develop a relationship with our users and potential users as early as possible;
- ensure the experience of these users is efficient, appropriate and at least equivalent to that found in the better commercial and social networking web applications;
- retain a relationship with our users for as long as possible beyond the period of core involvement with those users.

The University needs to attract good quality staff and students and the achievement of this goal is made more likely if the reputation of the University and its services remains high. Although the membership of the University is very inclusive and diverse it is probably fair to assume that a significant proportion of people who join the university or are seeking to join the University will have had a great deal of online experience and be highly technically competent. Indeed a high proportion of students and prospective students will have little recall of a time before the World Wide Web and will have been computer literate from an early age.

Since the advent of what are known as Web 2.0 technologies, users of the web have become accustomed to an online experience which is time efficient, well-designed, has a logical flow forwards and backwards and follows the conventions of good web-site design. Additionally they may expect to find web pages to be customisable, to retain their preferences (through the use of cookies) and to allow comments and access to a range of social networking applications as part of a user review process.

The University of Kent already maintains a well-designed website but the project makes recommendations for improvements specifically aimed at users seeking to obtain information with a view to perhaps becoming members of the university as staff or students. In particular the project recommends methods for using existing digital identities to register with the University, and for members of the University to link an existing digital identity with a Kent IT account.

The project also recommends the University takes steps to improve and strengthen its relationship with its alumni. Alumni form an important part of the University community and maintaining

a strong contact with them and ensuring their experience with the University's online services continues to be a good one, not only presents more opportunities to solicit gifts and donations but also contributes to the good reputation of the University which in turn will influence the choice of HEI by prospective students, particularly offspring of alumni but more widely too. Kent is now providing an alumni email service which contributes greatly to the University's good name and of course increases the number of alumni for whom an up to date email address is known.

2.2 Key recommendations

The project considers the following recommendations to be the main outcomes of the research carried out. The recommendations should be seen as a starting point to developing a Logins for Life service with scope for a great deal more development and enhancement as web technologies develop and the size and demography of the university membership changes.

The Logins for Life project team recommends that the University of Kent:

- Introduces changes to the on-line registration process for prospective students (and others) to allow registration and subsequent authentication by the use of social networking applications such as Facebook and Twitter and by use of protocols such as OpenID and the UK Access Management Federation.
- Investigates methods of facilitating easier but secure access to protected parts of the University's data and services. This could be via development of tools such as the School of Computing Linking tool or by adoption of other similar tools such as the apps being developed by the University of East Anglia and others or a combination of these technologies. The linking tool developed by the School of Computing at UoK will allow the user (member of the University) to link (and unlink) one or more from a subset of third party applications to his or her Kent IT account.
- Continues to provide an alumni email service (currently outsourced to Microsoft)
- Considers the extension of life long email provision to other classes of University ex-members e.g. ex-staff
- Provides online services aimed at alumni and accessible through the credentials of the Kent IT account the user held when a member of the university.
- Provides additional information and services for prospective students on protected pages of the University web site. These services could include accommodation information, forums, access to some parts of Moodle etc).
- Pursues the development, perhaps in conjunction with other interested HEIs¹, of Google apps, iPhone apps etc to provide better access to some University data (timetables, library loans, MOTD) especially from mobile devices.

2.3 Benefits

The introduction of 'self-authentication' via existing third party applications will result in an enhanced and less onerous user experience for prospective students (and others). This in turn

¹see University of East Anglia's ueaWolfie project: <http://ueawolfie.jiscinvolve.org/wp/>

will increase the numbers registering with the Kent website. The University will generally be able to store a contact point (email address) from the registering person which may be used for follow up. The university will better be able to compile usage statistics and the improved registration will enhance the reputation of the university as a Web 2.0 compliant organisation.

Allowing prospective students to register with existing accounts avoids the need for them to remember a new username and password. For the University this will result in a reduced number of multiple registrations and reduced workload associated with password recovery.

Maintaining a relationship with alumni increases the number among those seeking post-graduate studies who will consider, and we hope eventually choose, the University for that study.

The proposal to facilitate links between third party applications and the Kent IT account will make access to some university systems and data easier. Although difficult to quantify it can be argued that improving access to this information will increase attendance of lectures, reduce the number of overdue library books and increase the number of students receiving University information in a timely manner. Many students have social networking applications installed on mobile devices so would have instant access to some of their personalised university data from any location. Research also suggests that students may take more notice of Facebook announcements and often ignore email announcements, classifying them as a form of spam. Conversely they are checking their Facebook accounts with increasing regularity – in a 2008 survey it is reported that “students said that the number of times they logged into the site (Facebook) per day was 6.3 times”². There may be other benefits to our students from the use of Facebook, research by Leicester University ‘suggests the use of online networking can aid social integration among students who do not have the advantage of the face-to-face interaction that takes place in residential life on campus’³.

The integration of third party applications for registration at the Kent website facilitates the use of mobile devices as the need to complete registration forms is replaced by presentation of an existing third party account. Registration via this method can usually be achieved without the need to enter text which can be challenging on a mobile device.

Extending and enhancing the relationship with ex-members of the University (initially alumni) via provision of alumni email and other alumni services will lead to better communication with this community. Additionally the university will be able to maintain a higher percentage of valid email contacts for alumni and reduce the number of staff hours required to update contact details. Enhanced communications and services not only improve the University’s reputation but also present more opportunities for fund raising and raising awareness of developments on the University’s campuses.

A further benefit of alumni email provision is the fact that published university email addresses for those engaged in research are likely to remain valid for a much longer period, this will ensure, to a greater degree than at present, that the authors of research papers etc are contactable by their colleagues and by other academics interested in these papers. Obviously this benefits the reputation of the university and increases the chances of collaboration with other researchers. The recent survey of participants in the year long trial of alumni email showed that over sixty per cent of alumni were checking their alumni email account on a daily basis one year after completing their studies. There were also many positive comments on the benefits of this facility.

²Ana M Martínez Alemán, “Online social networking on campus: understanding what matters in student culture”, Array.

³“The Effect of Online Social Networking on Facilitating Sense of Belonging among University Students Living Off Campus.”

2.4 Risks and Impacts

Facilitating the use of social networking applications and OpenId to register with the University website may result in a large increase in the number of prospective students registering. The IS and Admissions databases holding these records will need to be scaled to cope with this. If the University also requests email addresses and authorisation from the user for follow up communications this will have an impact on administration staff. Additionally this could also result in an increase in the number of postal copies of prospectuses requested. Both these factors may have an impact on staff time needed during the recruitment period. Increased print runs for prospectuses may be required.

There are security implications in allowing access to some protected parts of the University's website via third party credentials. The severity of these implications will depend on the third party application used and what level of assurance it is accorded. Where the level of assurance is low the more secure parts of the website will not be exposed to what are essentially self-authenticating users. The damage that could be done at this level of access is anyway probably not going to be of a catastrophic nature but consideration of hosting these restricted web pages on a separate machine (virtual) should be considered. Where authentication uses a service such as UK FAM the level of assurance can be higher as there will have been a more rigorous registration process at the user's home institution including presentation of officially accepted identity documents such as a passport or driving licence. If the University decides to allow access to some parts of Moodle to users authenticating with linked third party applications then there will be further security considerations. Fine tuning of the access given is vital to maintain security. Currently the University of Kent hosts two instances of Moodle with an 'external' version being a discrete mirror of the live version and used to give access to local schools with whom the university has links. Giving access to the external version would obviously present less of a risk as would giving Read Only access to either instance.

To increase the likelihood of take up of these proposals, the consensus amongst the team members is that the level of assurance provided by a linked SNS or OpenID would give a student full read access to his or her modules on Moodle⁴. Submission of assignments would require an enhanced level of security requiring the user to provide Kent IT credentials.

Enabling the linking of social networking applications and OpenID to a Kent IT account will also require an audit of Levels of Assurance required to access University systems. Future installations and upgrades will need to follow procedures to ensure they have a sufficient level of assurance so as not to expose them to unnecessary risk of unauthorised access. Staff hours will need to be dedicated to these tasks.

Aside from the development costs of the linking tool other costs will include publicity, production of user manuals and help pages and additional workload for help desk staff.

Additional webpages and services for prospective students will have an associated development and maintenance cost. Additionally, interactive services such as forums for prospective students to ask questions of existing students and staff will require disk space and staff responsible for moderation and 'weeding' of spam. There would be additional staff work requirements if the forum were to offer opportunities to interact with staff members.

There is some risk that a forum to which an 'unknown' user could contribute merely by presentation of the credentials of a social networking application account, could increase the incidence of offensive, libellous or otherwise unwanted posts on that forum. Requiring posts to be approved

⁴As of February 14th 2011, Moodle account holders will have access to all modules across all schools and departments unless those modules have been specifically excluded by tutors.

prior to their appearance on the forum would completely contain this problem but will also necessitate regular – probably daily – intervention by an administrator/moderator. It also results in a more stilted ‘conversation’ for the users. An alternative strategy would be to allow forum posts without prior approval but to ensure that offensive, libellous or otherwise unsuitable posts were subject to prompt removal as part of a regular moderation process. This does carry the additional, albeit low, risk of an offensive post resulting in complaints or in an extreme case, threats of libel or other legal action. There are other options. Forum/bulletin board software often includes an option to impose a rule whereby a first post from a new user must be approved but subsequent posts are published immediately.

There are other considerations prompted by the provision of any forum but particularly by one which is easily accessible without an onerous or long-winded registration process. The university should have mind to the dangers of misinformation, deliberate or otherwise, posted by contributors. Some of the information provided by contributors will be subjective and not necessarily positive, e.g. “the dj’s in the night club are rubbish”, “the food in the late night café is not worth eating” etc – but unless it is libellous there is probably no great harm in its existence. It could be seen as evidence that the forum does allow the honest views of the students to be presented and is not just a ‘tool of management’ to boost recruitment. However policies will need to be drawn up and decisions made as to where the ‘line is drawn’ between acceptable opinion and offensiveness or misleading information.

Currently alumni email for UoK is provided by Microsoft so the continued provision of the service, and the annual increase in the number of accounts has little impact on staff or resources. However it is possible that the agreement with Microsoft could change. In order to fully exploit the resource for the purpose of contact with alumni, staff hours will need to be dedicated to administration tasks such as designing and running processes to extract mailing addresses from the alumni email accounts, procedures to establish whether accounts are still active and etc.

Current agreements and terms and conditions may need to be updated to include users who are no longer members of the University. Allowing use of an email service provided by, and ‘branded’ as University of Kent, by users who are not currently employed by the University or studying at any of the University’s campuses, and not covered by any distance learning agreement may increase the need for monitoring of online activity. The University will need to decide whether to monitor alumni email accounts for signs of abusive and/or illegal activity or other forms of compromised account. Other administrative tasks will need to be defined to deal with identification of and termination of accounts no longer in use (for example, in the event of the death of the account holder). Reference to the Janet ‘Email addresses for Alumni’ fact sheet is recommended.⁵

2.5 The consequences of not adopting a Logins for Life approach

Although currently UoK does not have difficulty in attracting students, the advent of increased tuition fees is likely to make the field of Higher Education more competitive. If students are borrowing larger amounts of money to pay their fees they are likely to become more discerning and circumspect about where they chose to study. Higher quality students are likely to also be more discerning and able to use multiple systems to inform their decisions. Young internet savvy students “not only consume information through digital inquiry but produce it as well.”⁶ The reputation of HEIs as expressed by current and former students is increasingly available via social networking applications and specialist websites such as push.co.uk and the.studentroom.co.uk. One of the effects of the advent of *Web 2.0* technologies is that the reputations of service providers, on line retailers and not least educational establishments are dependent on the views of their users

⁵Janet Email Addresses for Alumni: <http://www.ja.net/documents/publications/factsheets/081-alumni.pdf>

⁶Martínez Alemán, *Online social networking on campus*

and customers through the medium of on-line reviews, Facebook messages and pages, Twitter and many other instant, freely available methods of internet communication. The reach of social networking tools is very wide, fast, international and across all age groups and social classes.

In straitened economic periods such as the one the UK is currently labouring under, donations from our alumni have become more important to the University and also more difficult to solicit as the demands on the individual's funds become greater. In this scenario the maintenance and development of good communications and the provision of services such as alumni email help to counter a likely drop in donations. Conversely failing to take these measures is likely to result in more staff time being required to 'track down' alumni and a reduction in donations received.

The use of mobile devices to access information is increasing at a rapid rate especially amongst the university's largest user age group. Development of systems which facilitate and streamline access to university information through these devices is vital if the University is to maintain its position as a leading, modern place of Higher Education with state of the art facilities and services.

Information Services are no longer relevant only to an individual's work/study. The majority of people enjoy a lifestyle where computers and internet based communication are an integral part of their everyday lives. The University of Kent needs to have a strong on-line presence to maintain a prominent position in the lives of prospective students and alumni. A failure to provide appropriate and accessible ways to interact with the on-line community brings with it risks of University's profile becoming obscured by organisations with similar goals but better designed, more user friendly websites.

2.6 Costings

Precise costings (detailed in Fig. 2.1) for the project are difficult as further decisions would need to be made on the extent to which some of the modifications proposed will be adopted. How many additional web pages are to be provided? Will all suggestions be adopted fully? Are there similar models which can be adapted for use by the University? The table below gives broad costings based on an assumption that all the project's proposals are adopted and that all modifications are built from the ground up.

This gives an overall figure of 127 staff days of work. Based on a 7 hour day and working on an hourly rate of £35 per hour this gives a total cost of £31,115.00. The calculation does not take account of any possible recruitment costs or expenditure on additional or replacement hardware and software.

2.7 Conclusion

The Logins for Life project presents a clear conclusion that the University needs to demonstrate its commitment to current and future students and staff by providing facilities and enhancements to its online systems and services which will cement the organisation's position as a leading player in Higher Education. Increasingly, information technology spreads its influence to all facets of modern life – work, education, entertainment, social networking. The expectations of the average customer of the University are high, particularly in the field of information and Kent needs to ensure it meets or preferably exceeds these expectations.

Figure 2.1: Rough guide to tasks required and estimates at time requirements

Proposal	Tasks	Effort breakdown	Days effort
Allow registration on website with SNS etc	Design user friendly login page with links to T&Cs, alternative methods etc	Design: 2 days Implementation: 3 days	5
	Modification of LDAP database to store login details and Level of Assurance (LoA) requirements	Design: 2 days Implement: 2 days	4
	Policies and procedures, help desk training, wikis etc	Writing: 2 days Delivery: $\frac{1}{2} \times N$ days (where N is the number of Servicedesk staff)	7
Added value, protected web pages for prospective students	Design web pages for additional information, links to available forums and etc	4 weeks 1 days	5
Forum for prospective students	Configure/design phpBB software	2 days	2
	Draw up procedures for moderation/sizing/account administration	1 day	1
Adoption of Linking Tool or similar solution	Identify & evaluate current options [Linking Tool, Kantara products, ueaWolfie]	2 weeks	10
	Finalise design, LDAP modifications?, monitor use, help screens	1-2 weeks	10
	Audit of all Kent website pages and allocation of appropriate Level of Assurance. Implement chosen solution	4-6 weeks audit 4-6 weeks implementation	30 30
Enable continued logins for alumni	Draw up policies and procedures, definitions etc for continued logins for alumni. Modify LDAP permissions for this group. Publicise new services to alumni. Review alumni pages and services.	3-4 weeks	20
Ongoing tasks	Forum moderation, help desk, evaluation of effect of SNS authentication on take up	2 weeks p.a.	
	Transfer of website contacts to CRM/marketing staff, mail outs, follow ups etc	2-3 days design & implementation.	3

Chapter 3

Existing Workflows

This part of the document will attempt to document the current workflows for users in various transactions with the University of Kent information systems.

3.1 Prospective student seeking information on courses at Kent

A hard copy of the prospectus can be requested by clicking a link on the Undergraduate Prospectus 2011 page and then filling in a registration form.

3.1.1 Prospective student seeking information on courses at Kent

From the front page of the Kent website, the users can click a centrally placed box titled Undergraduate prospectus. The same destination - the *Undergraduate Study* page - can be reached from the *Courses* drop down menu beneath the landing page header. A great deal of additional information is available from the *Undergraduate Study* page. The user can now choose *Prospectuses* from the sidebar of this page.

A prospectus can be downloaded either in sections or complete, without any form of registration, from the *Undergraduate Prospectus 2011* page.

A hard copy of the prospectus can be requested by clicking a link on the *Undergraduate Prospectus 2011* page and then filling in a registration form.

3.1.2 Prospective student applies for under-graduate study at Kent

Undergraduate study pages on the Kent website provide a great deal of preliminary information, checklists of requirements etc but the first stage of application – prior to any registration with Kent – for undergraduate students is via UCAS. Users following the links to study at Kent will be directed to <http://www.ucas.com> to begin their application.

The UCAS process is not covered in detail by this document. Briefly, a student can apply to up to six HEI's for under-graduate study. Once this application has been processed by UCAS the target HEI's will receive a download of the applicant details. A student is identified at this stage

by a unique ten digit number supplied by UCAS. This identifier should remain with the student throughout this and any further periods of study.

This data is received by the admissions database at Kent. Admissions staff, using criteria agreed with the individual schools filter the applications. A small number of applicants will be asked to attend for interview by the schools at this stage. If applicants are rejected at this stage, the record will be deleted from the admissions database and UCAS informed of the decision. The remaining applicants will receive a conditional or unconditional offer. UCAS will inform the applicant of the offers. An information pack is sent by Kent to each prospective student. A record is created on the Student Data system with a status of Authorised.

A-level results will be disseminated to UCAS, HEI's and the students in August. At this point Kent will be aware of all the prospective students who may now come to Kent to study via the UCAS process and will distribute information packs and invite applicants to Open Days.

Some prospective students will now accept the offer, via UCAS, and those records will be exported from the SDS to create a record in the Administration database in Information Services.

The student is contacted again, by post, supplied with a student number and temporary password and asked to visit the ClaimID page on the Kent website. Once this process has been completed by the accepted student, he or she will have a Kent log in ID, a kent.ac.uk email address and will have access to online resources, Moodle and the Student Data System.

The process has been drawn up into illustrated slides (see Appendix A).

3.1.3 Application through clearing

If a prospective student receives no offers then the UCAS clearing website will direct students to what courses are still available. The applicant completes a registration form on the Kent website and is asked to supply the UCAS ten digit identifier if they have previously made an application through UCAS. If they have previously studied at Kent they will be asked to provide their old Kent ID. This clearing registration can also be done by telephone. At Kent academic clearing officers process the applications and make decisions. If an offer is made to an applicant then they are directed to a specific part of the UCAS website called UCAS Track. Admissions staff at Kent are able to view the whole of an applicant's UCAS application. Kent staff match the data they hold on the applicant and verify qualifications. If the offer is confirmed then UCAS are informed.

Exception: International Foundation Year students can apply direct online for a place at Kent. They do not have a UCAS identifier and UCAS may not even be aware of their existence. There are 50 to 60 student s in this category each year.

3.1.4 Post-graduate study

From the Kent website front page a user can choose Graduate Courses and download or order a prospectus without registration or from the Courses menu beneath the header, choose Post Graduate study and then How to Apply.

Email verification is required from applicants.

Applying online will generate a unique Kent identifier. During the application process applicant is asked for any previous study at Kent. These applicants are not given an UCAS number (some may have one). The Admissions post grad database does not store the UCAS identifier.

When the records of successful applicants are transferred to the SDS a new unique identifier is created. The SDS does not link a post graduate student record with a previous under-graduate record at Kent. UCAS do not have any involvement in the processing of students undertaking post graduate studies at Kent. Eighty per cent of applicants for post graduate study at Kent are from overseas and 55-60% of post graduate students at Kent are from overseas.

3.1.5 Part time study

Applications for part-time study are made from the Kent website. There is no UCAS involvement with part-time applications and previous study at Kent is not flagged up or recorded. If an applicant is successful they will be given a unique identifier when a record is created on the SDS.

When a part-time student gains a certificate they may decide to convert their course to a diploma course, if they do this without leaving Kent then they will retain the same identifier. If they leave Kent for a period and then come back to embark on a diploma course then they will get a new record in the SDS and their previous record will not be linked.

Chapter 4

Policies and Procedures

4.1 Use of 'Coming to Kent' Forum

The university will provide a forum (Coming to Kent) which will be accessible by members of the public who have registered with the Kent website by means of the registration form or via one of the accepted third party applications eg Facebook, OpenID etc. The purpose of the forum will be to allow prospective students and other interested parties to ask questions and exchange views with current and ex-members of the university on the facilities and services available both on the university campuses and in surrounding areas, particularly subjects that may not be covered by official information resources provided by the university.

The university should identify a person or persons who will be responsible for moderation of contributions to the Coming to Kent Forum and to ensure that any permanent information provided by the university is kept up to date and accurate. Moderation will be carried out, at intervals to be decided, which may vary according to the amount of activity on the forum as governed by the time of academic year e.g. during clearing, prior to A level results etc.

The purpose of moderation will be to discourage, and where necessary take action against, forum users who contravene the university's rules on use of the forum by, for example, posting messages which are offensive, abusive, illegal etc. The moderator should also check messages for content which, whether deliberately or not, give serious misinformation about the university, its staff and services. Discretion will be needed in this role to avoid stifling honest debate and the exchange of opinions and to avoid giving users the impression that only posts which 'toe the university line' are acceptable on the forum. However, posts which categorically make important statements about the university and its services which are demonstrably untrue may need to be challenged or removed.

Other examples of unacceptable use that should be looked for include:

- Advertisements by commercial organisations purporting to be comments from genuine users
- Deliberate attempts to distort opinions by users who perhaps have other agendas
- Attempts to recruit users to political or religious organisations
- Spam and other messages containing hyperlinks to commercial sites.

Regular participation in the forum by members of staff acting in an official capacity may be seen as unwelcome interference to some users especially if the forum is advertised as a platform for users to hold conversations with their peers. However, it may avoid repetition and misinformation to 'pin' posts within the forum which will give links to official sources of information on university services and those facilities and services found in the local area. Examples may include lists of catering outlets on the campus(es), information about public transport, details of sports facilities etc.

Forum posts should include a link to allow users to report a post which they consider to be offensive or in some other way unacceptable which will expedite the moderation process by a member of staff.

4.2 Using third party applications and protocols to register with the university

Registration pages for prospective students will advertise the facility to register using the credentials of an existing third party application drawn from a list decided by the university. The logos and names of these applications will be prominently displayed as icons on the registration page. Clicking on the icons will initiate the registration process. During the registration process the user will be informed, via the third party service provider, the data which it is proposing to share with the university. The user will have the option at this point to cancel the process and no data will be exchanged. The registration process will present to the registering user, links to information concerning the responsibilities of the user and the university in entering into this arrangement.

During the registration process the user will be given the option to agree to or to opt out of, receiving emails from the university and to edit or change the email address via which such communication may be made.

Registration pages will also prominently display a link to an on-line registration form for those who do not wish to, or cannot, register with third party applications.

4.3 University of Kent Account Linking Tool

The university will advertise the availability of an account linking tool on appropriate pages of the university web-site. This webpage will give instructions for, and facilitate, the linking of one or more third party application accounts to a valid Kent IT account. The logos and names of the currently accepted applications will be displayed as icons or links on the web-page. Clicking a link will start the process of linking the credentials of the chosen application to the Kent IT account. The page will also display links to guidance and regulations on the use of linked accounts on the university's IT systems.

Once successful linking has taken place the user will be able to access some protected parts of the university of Kent website by presenting the credentials of the third party application and without needing to present their Kent IT credentials.

Links to third party applications other than those whose icons are displayed on the account linking webpages will not be facilitated or allowed.

The webpage will also contain links and guidance on how a user can unlink one or more of the previously linked applications.

The university will audit all webpages and services available on the university's IT systems and allocate a Level of Assurance (LoA) appropriate to that facility. Linked third party applications will have a lower associated Level of Assurance than the Kent IT account and will therefore only give access to webpages and service with the same or lower LoA. Procedures will be put in place to ensure that all new services and resources added to the university's systems will be given an appropriate LoA.

The university will periodically review the third party applications which are accepted for linking to a Kent IT account and may add additional applications, remove current applications or make substitutions.

The IT regulations and guidelines for users will be augmented by the additional guidelines detailed at the end of this document.

4.4 Rules and Regulations (Additional)

4.4.1 IT Regulations for registered non-members (including those self-registering with third party applications)

All registration/authentications to University of Kent website, whether by use of a Kent IT account or via accepted third party credentials must conform to the general IT Security guidelines.

Users registering by means of third party applications and protocols will also be deemed to have accepted to be bound by the university's IT guidelines and regulations as stipulated in the following documents:

IT regulations Regulations for the Use of Information Technology (IT) Facilities at the University of Kent¹

Use of computers and mobile devices Regulations for the Use of Computers & Mobile Devices Not Owned and/or managed by the university and Connected to the Network²

University of Kent network Regulations for the Provision of Network Services on the Network³

Code of conduct Regulations governing any user's conduct⁴

IT security policy General IT security policy⁵

These are in addition to an agreement to comply with UK Legislation, including the Computer Misuse Act, the Obscene Publications Acts, the Data Protection Act and the Copyright, Designs and Patents Act.

¹<http://www.kent.ac.uk/is/regulations/it/ITregulations.pdf>

²<http://www.kent.ac.uk/is/regulations/it/regulations-computers-mobile-devices.pdf>

³<http://www.kent.ac.uk/is/regulations/it/regulations-network.pdf>

⁴<http://www.kent.ac.uk/is/regulations/it/?tab=code-of-conduct>

⁵<http://www.kent.ac.uk/is/regulations/it/securitypolicy.pdf>

4.4.2 Registration with third party applications and protocols

Registration and subsequent authentication to the University of Kent website will be permitted by presentation of current, valid Kent IT account credentials or by presentation of one of a number of third party applications and protocols. The currently accepted list of applications/protocols will be displayed on the University of Kent registration and log in pages. The acceptance of these third party applications and protocols is subject to change or withdrawal, should this be deemed necessary for security or other reasons by Information Services. Additional or replacement applications and protocols may become available in the future.

An alternative, form based registration will be provided on web-site registration pages.

Persons registering to the University of Kent website by means of social networking applications or other approved methods may receive a request to supply an email contact address. This and additional information may with the user's approval be supplied to the university as part of the third party software authentication process. The University of Kent will store, for anyone registering via these methods, only the following personal details:

- an email address,
- name.

Communication using this contact address will only be made if the user has given permission. Registrants will be given an opportunity to change contact details if they prefer to use a different name and/or email address.

Registration and subsequent authentication via third party applications does not give the university access to the user's third party application account, nor does the university seek access to the application or data stored within that application. To clarify further, if a student or prospective student registers or authenticates using the credentials of a third party application such as Facebook, the university neither has, nor will seek to obtain, access to that user's profile information, wall posts or personal messages, friends list or address book, photographs, videos or any other data stored by Facebook or their affiliates.

4.4.3 Use of account linking tool

Members of the university may link their Kent IT account to one or more accounts with approved third party software (e.g. Facebook, OpenID, Twitter etc). This will give restricted access to the university web site and on-line services. Users can elevate this access at any time by providing their Kent IT credentials. Account usernames and passwords when used in this way may give access to protected resources on the university's servers. It is the responsibility of the user to keep these security details secure and to refrain from sharing them with anyone else. If a user believes that a linked application has been compromised they should take all precautions necessary to prevent unauthorised access to the university's information systems, i.e. unlink the application from the Kent IT account, change the password of the third party application and report the breach to the IT Service Desk and seek further advice.

Users should be aware that any social networking application they have linked to the university's system will have elevated privileges beyond its use as a platform for communication and entertainment and should therefore guard against unauthorised access, even from friends and acquaintances as the application may give access to protected resources on the university's

servers. The owner of a Kent IT account will be held responsible for any breaches of security or unacceptable conduct even if this is enabled via the linked application.

A member of the university who has linked a third party application to a Kent IT account may unlink that account at any point. Facilities to achieve this will always be available from the University of Kent website.

4.4.4 Alumni email

Users of the University of Kent Alumni email service are bound by all of the university regulations regarding use of computers, university networks, code of conduct etc.

The university may, from time to time, contact alumni via the email service to inform of changes to the service, to request updates to details held, to pass on general announcements and etc.

Users of the Alumni email service will also be subject to the terms and conditions of the third party service provider (currently Microsoft Ltd).

Provision of an alumni email service may be terminated, curtailed or in other ways restricted should the university decide it is necessary to do so for security or other reasons.

Users may opt out of the Alumni email service by contacting Information Services and requesting termination of the account.

The university reserves the right to terminate, or suspend an account if:

- reasonable efforts, over a period of time, to establish that an account is still in use have failed,
- conduct contrary to the university's regulations is detected
- other activity deemed unacceptable by the university is detected and which persists after a request for its cessation or is of an extremely serious/offensive/illegal nature and likely to bring the university into disrepute.

4.4.5 Participation in University of Kent on-line forums

The university may provide a forum for registered non-members and members of the university to exchange views and ask questions on various aspects of life at the University of Kent. This service is provided primarily to allow prospective students to obtain information and opinions on a range of subjects that might not be covered by official university resources and from the perspective of current students and other interested parties. It should be stressed that these views are the personal views of the participants and should not be seen to be officially endorsed by the university.

The service, if provided, is provided 'as is' and no guarantees are provided that questions posted on the forum will be answered. The university is not responsible for any misinformation, or any other content, acquired as a result of reading the forum. If information learnt from the forum is a significant factor in choosing the University of Kent as a place of study, users are recommended to seek verification from official sources. Whilst not wishing to stifle candid comment, users of the forum are requested to avoid offensive or inflammatory postings and to treat other contributors with respect. Abusive posts and use of discriminatory language will not be tolerated and will

result in the offender being banned from the forum. The forum should not be used for the purposes of promotion of commercial services though advertisement of university societies and other groups is acceptable.

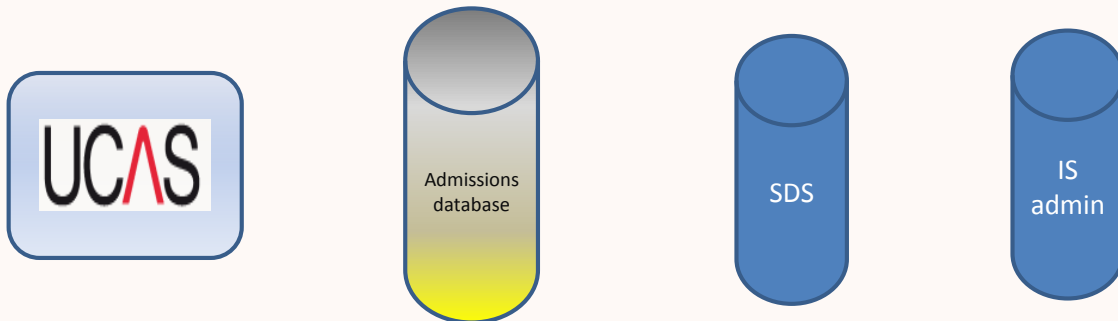
The university reserves the right to withdraw the service or parts of it at any time.

Appendix A

Undergraduate admissions process diagrams

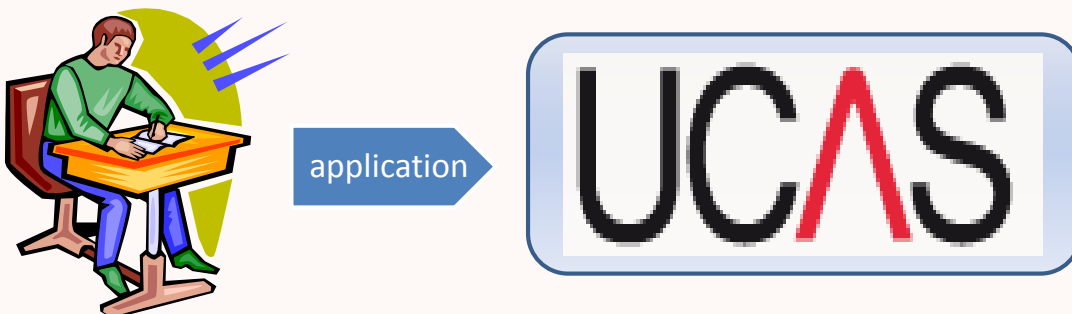
The following pages detail the processes involved in a prospective student becoming an active student.

Workflow: From application to claiming account



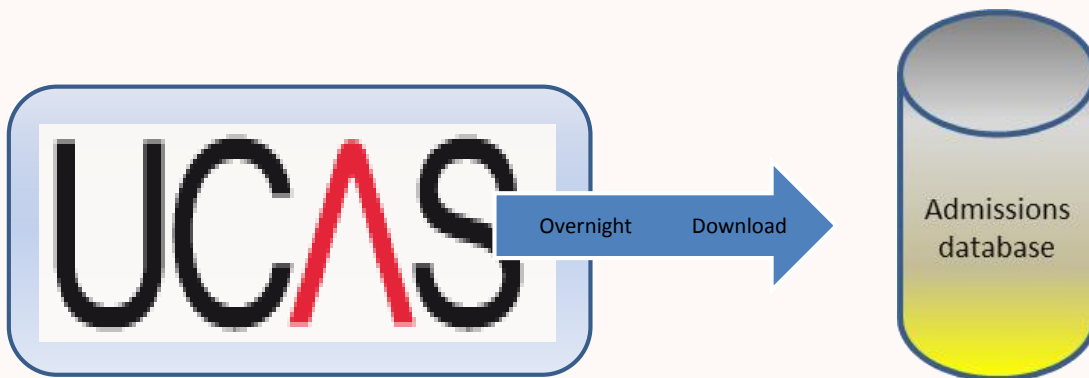
There are four data stores involved in the process though unsuccessful applicants do not have entries in all silos.

Workflow: From application to claiming account



The applicant decides to make an application to study at University of Kent. The initial application is via UCAS. Up to six HEIs can be chosen and UCAS creates a unique ten digit id for the applicant which stays with that person

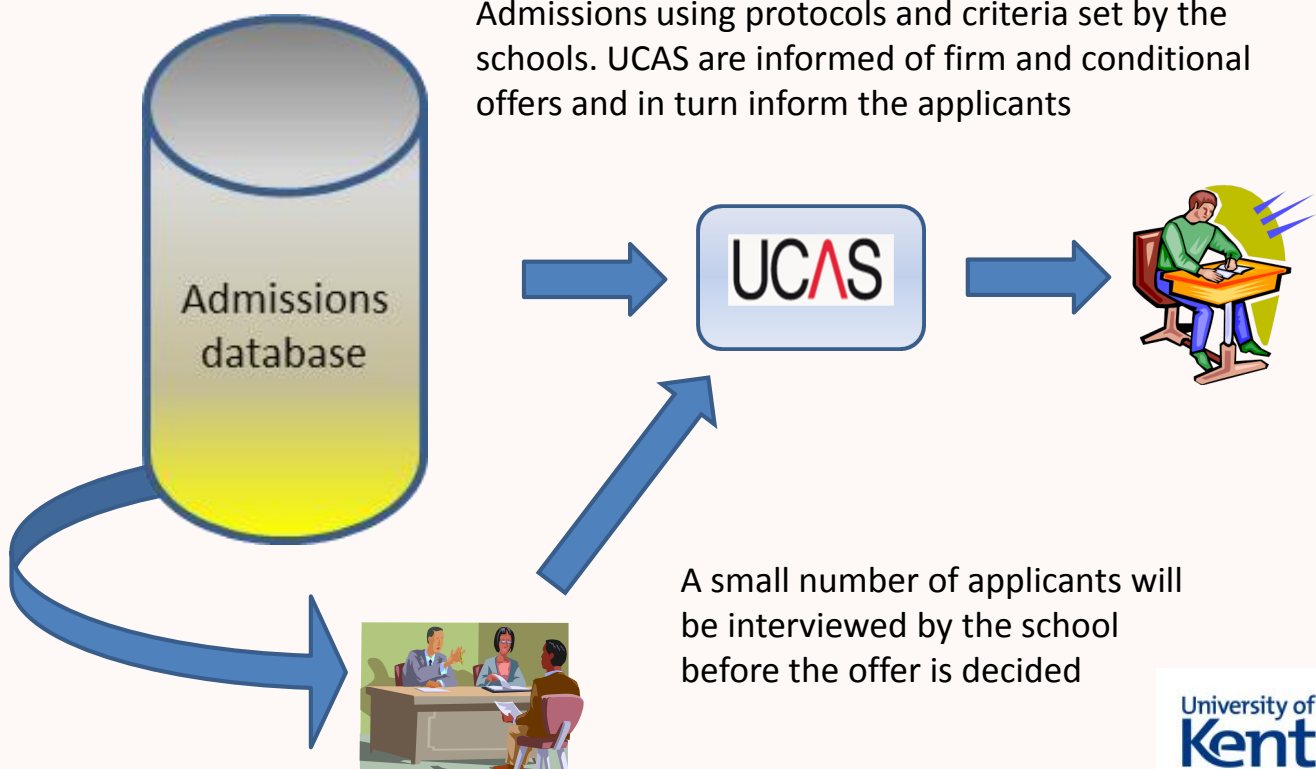
Workflow: From application to claiming account



UCAS processes all applications and distributes those records which fit the criteria, including the ten digit id to Admissions office at UoK

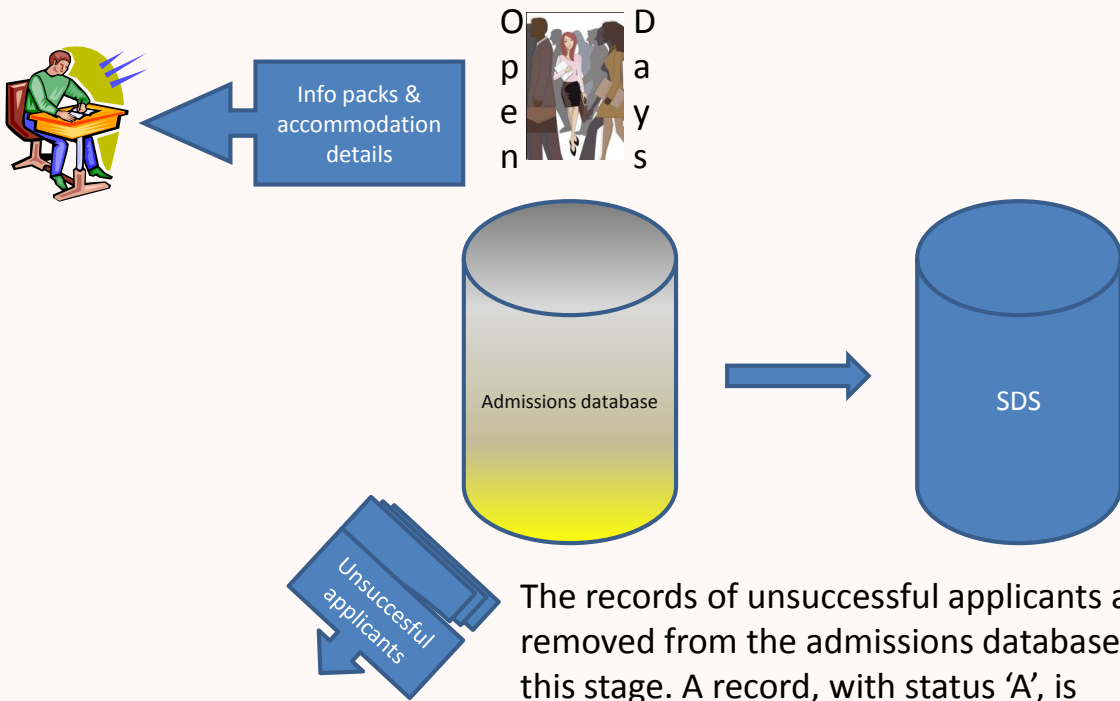
Workflow: From application to claiming account

The majority of applications are dealt with in Admissions using protocols and criteria set by the schools. UCAS are informed of firm and conditional offers and in turn inform the applicants



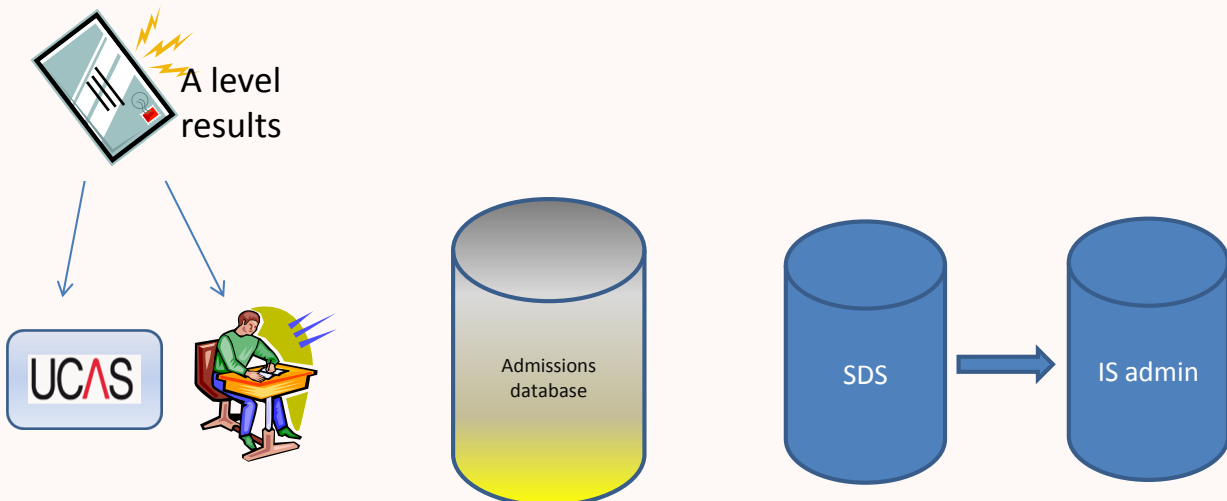
A small number of applicants will be interviewed by the school before the offer is decided

Workflow: From application to claiming account



The records of unsuccessful applicants are removed from the admissions database at this stage. A record, with status 'A', is created in the Student Data System for all applicants with offers.

Workflow: From application to claiming account



In August UCAS and the applicants are informed of A level results

Records of applicants accepting offers are exported from the SDS to the IS admin server with various status codes.

Workflow: From application to claiming account



Accepted Students are sent a welcome letter, details of accommodation on campus and invited to claim their IT accounts online. Student now has access to email, moodle, student data system etc.

