Background

In the UK it is widely predicted that sometime in 2015 the majority of web access to content and services will be via mobile devices. Gartner analysts are very blunt about the trend:

“The release of the iPhone five years ago marked a shift towards a mobile-dominated future,” said David Mitchell Smith, research vice president and Gartner Fellow. “With phones and tablets becoming a platform for the delivery of applications and information, and not simply a communications tool, the era of running applications solely on desktop and notebook PCs is rapidly being superseded by a fast-moving, diverse era of ecosystems that span consumer electronics, business computing, fixed-location clients and mobile clients.”

In higher and further education the access figures are much lower than in other sectors but there has been a dramatic increase in this area in recent years which we can only expect to continue.

The University web team have an on-going project to optimise the technology that delivers the University web pages for mobile delivery. However the real focus of the web is content and it is important to focus on information and services that can be delivered via mobile platforms that are useful and helpful to students at the place and time that they need them. It is clear that mobile ‘apps’ are a logical way to fill this need.

It is unlikely that the University of Glasgow could (or should) provide the resources required for creating and maintaining multiple native apps, but we do have experienced web designers and developers who already possess the skills required for creating HTML 5/CSS based ‘apps’ - which have the benefit of being cross platform. It is also relatively easy to change these ‘apps’ or even the underlying technologies used to deliver them as the ‘app’ itself resides on the server at a University URL.

There are already several projects using HTML 5/CSS technologies which are reasonably mature, for example JISC funded “Mobile Campus Assistant” from the University of Bristol, the Molly project from University of Oxford and JQUERY mobile - a touch optimized web framework. These and other similar projects are free to use and should be investigated with a view to leveraging experience and techniques already in existence. There are limitations to the HTML 5/CSS approach, largely based on the capability of devices, which should be considered and we should also at least examine other solution which are being provided in this market.

Strategy

The University’s strategic plan emphasises core values of: Integrity, Credibility, Openness and Success and indicates that underpinning these values is responsiveness – “our commitment to responding to the needs of our colleagues, students, research funders, sponsors and visitors in a helpful, timely and sensitive manner”.

University of Glasgow

Glasgow Mobile - a strategy and scope

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What the mobile environment brings to information discovery and collaboration, between individuals or groups, is the possibility of improving responsiveness. Staff, Students and Visitors have devices in their pockets or bags, that can be used whenever or wherever information discovery or interaction is needed. To facilitate this responsiveness, the mechanisms that are used to provide information and services to mobile devices must themselves be responsive. What is required tomorrow will not be the same as what is required today and systems and development based on long lead-times and tied to particular version of devices will rapidly lose their usefulness. This is a lesson that industry analysts have noted as having been learned the hard way by organisations that have been early adopters of mobile technologies over the last two years.

Mobile applications should be designed to deliver useful information at the point when it is needed, whether that be access to databases or corporate systems, to library catalogues or course materials, to room locations or cluster PC availability, to email or instant messaging or whatever is required for the task in hand. The strategy must be to get the information or facility to the user in a form that suits the device that they have and their need, at the moment when it is required.

**Collaboration**

Collaboration, whether it be amongst students, between students and staff, amongst researchers or in relation to administrative processes, is key to effective research, learning and teaching and administration. Whilst there are many channels for this activity, the increasing use of social networking tools and techniques in all areas of life provides opportunities for these to be used in imaginative ways within the University. This is not about forcing people to work in different ways, but making use of ways of interacting that are increasingly becoming a commonplace in daily life.

**Learning and Teaching**

Support for and alignment with the University Learning and Teaching Strategy and the developing e-Learning Strategy are key objectives of this Mobile Strategy. Development of student feedback mechanisms and electronic voting can and should make use of the devices that students possess, rather than requiring more costly and time-consuming processes. Students have always engaged with their course materials on the move, though mostly on paper. Facilitating electronic access to written and the audio/video resources for courses via student devices is a key target in the development of learning and teaching.

**Research**

The research process is about gathering and processing information and collaboration. The fact that most of the people involved in them have mobile devices provides opportunities for new ways to support these activities to facilitate more flexible ways of working.

**The Student Experience**

Many organisations (including a significant number of universities) have started their mobile offerings by concentrating on information sources that are readily available and in the main these sources have been concerned with opening hours, locations and other useful information about what is happening in and around their buildings and campuses. Availability of information has been the key consideration, rather than asking the question “what would be genuinely useful to students (and others) on the move?”. This strategy has at its centre that question and focuses it in different areas of University activity. It does seek to make use of what is easily available in the early stages, but have far greater ambitions in relation to seeking to answer the question, through informed discussion in as many areas of University life as possible.
Delivery

The strategy, and associated project to deliver information and services, will be managed by IT Services and jointly delivered, in collaboration with a range of information and service providers from across University Services and the Colleges. The project is not primarily about IT and will be strongly focussed on the information rather than the technology.

Goals

The delivery of staff, student and visitor services that fit into the context of mobile should be implemented in three stages: short, medium and long-term.

1) Provide information and services that already exist in other forms to in a mobile-friendly form.
2) Concentrate on narrowly focussed information or services which are most usefully delivered ‘on-the-go’.
3) To deliver information and services in an agile, lightweight way which seeks to minimise development costs, avoid lock-in or over-reliance on a particular technology (or set of technologies)
4) Establish suitable mechanisms to identify new targets to be included by developing a matrix which would include:
   a) Availability – information that can be extracted from existing services and systems (both internal and external), that can be re-presented and/or re-shaped for convenient mobile delivery.
   b) Suitability - Not all content is suitable for mobile delivery. Guidelines should be developed which should be adhered to in order to provide the maximum benefit to staff, students and visitors whilst protecting the reputation and consistency of the University’s mobile offering.
   c) Benefit over cost - Some services we might wish to include may prove too costly in to implement, for the benefit that may realistically be derived and this must be carefully considered in each case.

Services for inclusion

Identifying services for inclusion will be a dynamic activity, and the current position will be captured in a living document. The starting point (see Appendix 1) is based on current knowledge and capabilities. Further services can be included as we gain experience and begin to gather feedback and requests, taking into account suitability and benefit over cost.

Conclusion

There are many areas of the University’s Strategic Plans that provide opportunities for the development of a more comprehensive of approach to provision of information and services via the mobile devices that many staff and students carry around with them every day.

The technical infrastructure for delivery of mobile services is already established in the University via the wireless network and this will continue to develop for a range of purposes. This mobile strategy piggybacks on that to deliver information and services via this additional channel.
There are a number of existing services which can be used to provide content fairly quickly and cheaply using skills and resources already available.

In the medium term a number of issues will need to be addressed, including: ownership, approval, development and support of mobile apps - for which resources will be required and a business case will have to be constructed.

Comprehensive and inclusive guidelines should be created to provide guidance and consistency across the mobile app ecosystem, so as to produce an easy to use and easy to add to environment, whilst also allowing freedom for innovation.

There is a wide range of possibility in relation to producing mobile apps for students and the future directions that this approach to delivery might take. By establishing an initial service with a small number of very useful elements, the University and the student body can together build confidence in the approach and the reliability of mobile delivery as a viable option for service delivery. There are perhaps a range of stakeholders in the University who are not addressed in this initial strategy and an on-going task will be to identify both them and the range of further possibility for useful delivery of service via a mobile apps.

**Next Steps**

1) To get formal agreement to this strategy.

2) To create the project team and governance structure.
   - project board,
   - project director
   - project team leader
   - 2 developers

3) Establish consultation mechanism with stakeholder groups.

4) Agree priorities for the first 12 months.
Appendix 1

Starting point

Short Term

(Beta version as soon as practicable)

This can be done using existing content with little development and without any ‘back end’ i.e. the pages for the app can be created manually.

The following services are immediately possible and should be considered for mobile app delivery:

1) Student print credits – to allow students to pay for printing wherever and whenever they need it.
2) PC availability in the Library, Reading Room and Fraser Building – to allow students to find the free machines in public clusters without wasting time searching each location and to allow the facilities available to be used more efficiently.
3) A variety of Library services – to permit searching for learning materials anywhere even on the move.

If a pilot project goes ahead in the following area this would also be an immediate possibility for mobile app delivery:

4) MBclick (Voting system) – to remove the need for dedicated devices for electronic voting and all the associated organisational and maintenance issues, with students voting via their phones, or other mobile devices instead.

It is also important to include a feedback mechanism and collect stats so that we can add (or remove) services according to their usefulness to the audience.

The following services do not yet exist in a mobile friendly form but could be relatively easily adapted and so should be considered for inclusion in short term.

1) Opening hours of key services
2) Mobile accessibility to contacts and critical web forms.
3) Hospitality services menus
4) Possibly student Unions Twitter or RSS feeds.
5) An interactive map of the University so that students, staff and visitors can find teaching rooms and other key locations directly from their mobile devices, wherever they are on Campus.
6) The Moodle mobile interface is scheduled to be available for evaluation by the start of 2013, which will give access to course information, learning resources, formative and summative assessment activities and course evaluation mechanisms in classroom and not just in computer laboratories.

Medium term

(Within 1 year)

We will consult widely with all who are interested in delivering mobile based services and develop coordination and integration mechanisms.

For longer term production it will be necessary to consider how this service will be managed, implemented and delivered. This may be done by using some ‘back end platform’. Choice of the platform should be made after investigation of the currently available options. However as the
proposed app simple aggregates and integrates from existing services it may be possible to manage delivery via HTML mechanisms only.

In either scenario resources will be required, the nature of which would need to be more clearly defined.

The University project to allow the current website to be viewed via mobile will also allow existing content –where appropriate, to be easily leveraged into apps.

The following services do not, as yet, exist in a form which can be included in an app and so development work, including authentication mechanisms and web services, would be required in order to make them available.

1) Personal course and timetable integration including push alerts.
2) Exam results.
3) Course calendar.
4) Learning & teaching services e.g. Moodle.
5) Location based services e.g. buildings and rooms directions according to your current location.
6) Local travel information.
7) Sport and Recreation online bookings.

The main challenges will be accessing data in digestible forms and the capabilities of the app delivery service. We will need to consider how other services fit into this, for example SharePoint, MyCampus, etc.

Support and on-going development issues will also need to addressed.

**Long term**

*(Over the next two years)*

Continue to evaluate, develop and enhance the ‘Student services’ apps based on student suggestions and requests, feedback, usage and collaboration with other University Services.

**Other possibilities - on the horizon**

- A University ‘ecosystem’ for apps which provides both centralised control and developer freedom.
- Augmented Reality. E.g. Point the device at a building and information is provided on services or function.
- Near Field Communications (NFC) services e.g. could replace ID cards for access to buildings and other services.
- Integration with University cloud based storage.