Synergy: considering technology in the context of strategies for people and the campus environment

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Abstract

For technology to be of maximum benefit and deliver its potential to transform our organisations it has first to be embedded in our human systems, procedures and daily activities. Making technology part of the 'daily life' of the institution is key to this and includes considering the application of technology in human and physical contexts. Glasgow Caledonian University has an international reputation for its Learning Café – REAL@Caledonian. The strategic framework within which REAL@Caledonian was developed is an example of the application of technology in human and physical context. The success of this development has stimulated the University to invest in a new building, The Saltire Centre, that represents the next stage of strategic development at Caledonian and brings together learning space, library services, student support, and social interaction in one technology enabled innovative space. The strategic context for the Saltire Centre will be discussed and the purpose, layout, and operation of the building will be covered.

Keywords: Strategy, learning, technology, built environment

1. Introduction

The Learning Café at Glasgow Caledonian University, which opened in 2001 was an experiment to address the need for innovative leaning space. In the four years since then it has received international acclaim. The cafe has had visitors from over 30 UK Universities and from education and business organisations in Europe, America, and Australia. It has sparked enormous interest as institutions across the world seek new recipes for the development of engaging, technology supported, learning spaces. REAL@Caledonian is not just a café – it is a deliberate attempt to provide a social learning environment that makes use of technology but is not dominated by it. Nor is it a cybercafe or internet café – it deliberately does not have a 1:1 computer to user ratio, for important pedagogical reasons. REAL@Caledonian has a wide variety of seating styles and deliberately has only 80 computers for its 200 seats. It was developed around the concept of people and the learningful conversations that Peter Senge in his book The Fifth Discipline identifies as crucial to workplace learning – with IT as support.

That this refreshing approach to learning space works for its users is evidenced by the comments of students (see the video at www.realcaledonian.ac.uk) but also by the positive reactions of the many visitors to the cafe. The key factor about this space is that many users and visitors 'understand' it intuitively at a fundamental level. This is not surprising - tour any European University Campus and you will see students in the refectory in groups with food, drink and laptop working collaboratively. What's missing in this scenario is immediate access to the rich variety of paper based resources that are provided in our University Libraries – and will continue be for many years to come in spite of the digital information revolution. No accident then that REAL@Caledonian is situated in the Glasgow Caledonian University Library.

The underpinning educational paradigm for the cafe is one of social constructivism, as John Seely Brown said – "all learning starts with conversation".

The space is deliberately designed like an open plan office as Glasgow Caledonian is a vocational University and many of our students will experience this type of environment in, at least part, of their working lives. It is clear that if we can enable students to understand, and become proficient users of, such environments then they will have a head start in their professional careers.

Like many modern Universities staff at Glasgow Caledonian expect students to undertake problem based learning, projects, assignments, and group work. The Learning café provides the essential ingredient for students to enable them to engage with such student centred approaches to learning – the café is a space for interaction, and stimulates those conversations that spark the new idea, it enables problem solving, is a place to be, and provides technology support that is available but does not have an overpowering presence.

The feedback on the café from students and visitors makes it an unqualified success. For the University it has promoted deep thought on the possibilities for space on campus, the nature of student learning in a vocational University, the role of technology, and the roles of staff, and has led to the development of a new £23 million building [8].

2. Linking vision to strategy and action

Glasgow Caledonian is a modern University formed in 1993. The University has a vision to be "entrepreneurial in all of its

activities" and "innovative in its programmes, learning and research". Caledonian is also an access University with 27% of its undergraduates coming from deprived communities – not surprising then that the University vision is to be "inclusive of all sectors of society" and, having a wide variety of students with a diversity of needs to be "responsive to the needs of the individual".

The strategy for achieving this "entrepreneurial, innovative, inclusive and responsive" vision is based around three key areas of investment – people, technology, and the (built) environment (see diagram below).
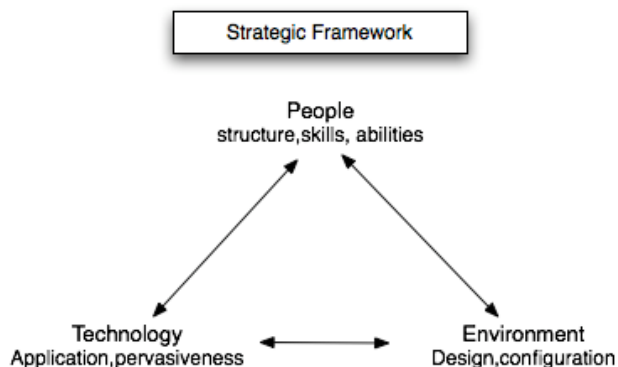

Figure 1. Strategic framework @ GCU

Simultaneous consideration of all three strategic areas is of crucial importance as it is the way these are blended and combined that will make the most significant overall difference to the experience of the student. Environment is the most long lasting and tangible of these strategic areas and will consequently have the most impact. When thinking of the future we often think of technology but it is facilities in which people will interact and use technology and the collective intellect that will be of most importance.

"I propose that the schoolhouse of the future for colleges and universities should be a hybrid model, one that incorporates creative uses of technology, architecture, and people. This model not only will aid us in the design of new campus structures but also will help us to improve learning and to provide the socialization that supports the making of meaning for students in our new era."[4]

A first pass around this framework in 2000 to 2002 involved the formation of a single IT service in the University in the people domain. The IT dimension involved the implementation of a staff and student portal (which won a Eunis prize in 2001). The Learning café, described earlier, was also opened as part of this initial package of developments.

Shortly following these developments, in 2002, the University took the decision to integrate its provision of student support and formed a university wide Learning Service [9]. Learning Services encompasses the Library, IT service and student services, with the Registry being added later. Learning

Services consists of three units. Learner Support handles all services that interface with the user, Learning Resources provides the integrated infrastructure services and the the products of Learning Services, such as the academic programmes, summer school, induction and e-learning, are managed by General academic and Professional Studies (GAPS).
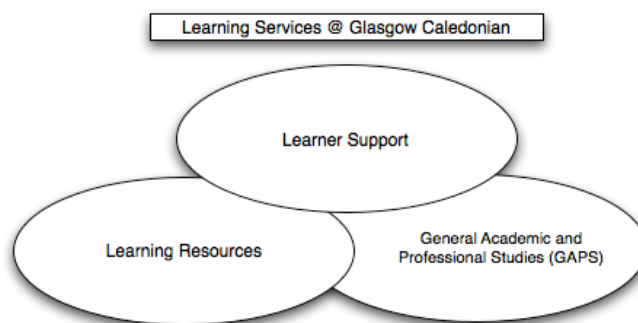

Figure 2. Structure of Learning Services @ GCU

The major technology development in this second phase was a project called the Student Access to Services project (SAS). This project was based on a simple principle that "students should not have to understand how the University is structured in order to access its services. The SAS project involved a systematic examination of the student/University interface with the intention of taking all information and transactions online and consequently freeing staff from mundane repetitive tasks so that they could deal with more problem related, rather than transactional, student matters. SAS has delivered significant developments in the areas of money, exams, and coursework, three key areas identified by student focus groups at the start of the project. The project has also enabled integration and closer working of student support services by integrating the services that are offered. This is of fundamental importance. In Re:Imagine [5] Tom Peters calls for a focus on the user. Organisational silos stand in the way excellent service and technology, and the web in particular, demand integration at the user interface. The SAS project has focused on cutting across departmental processes and delivering with a user focus. Peters also stresses the need to respond to the growth of consumerism [6] by forgetting service and focusing on 'experience'. An unforgettable student experience is the goal of the SAS project when combined with the second phase development in the environment domain. The new learning centre, the Saltire Centre, is the setting for the delivery of the outputs from SAS.

The growth of student numbers in Higher Education in the UK has put enormous stress on the resource base and we have seen many students become casual users of institutions rather than involved members. If nothing else retention and completion data show that there is a problem with student engagement – or the lack of it. Transformation of service through synergistic actions such as SAS, cross functional structures such as Learning Services, stimulating environments such as the Learning Café, and imaginative use of technology combine to grab student attention and engage them with the University. This engagement takes a view as

students as 'members' [1] of the University rather than passive consumers of its services. The prevalent educational model in the UK is one of passive extrinsically motivated learners. A focus on providing excellent experiences by re-engineered service delivery, and imaginative facilities has the potential to produce actively engaged, self motivated students who will become the entrepreneurs, researchers, and lifelong learners of tomorrow (fig.3 below). Facilities are particularly important in this respect as many of our students are the first in their family to study at University. One consequence of this is that the home environment, in many cases, is not congruent with study.
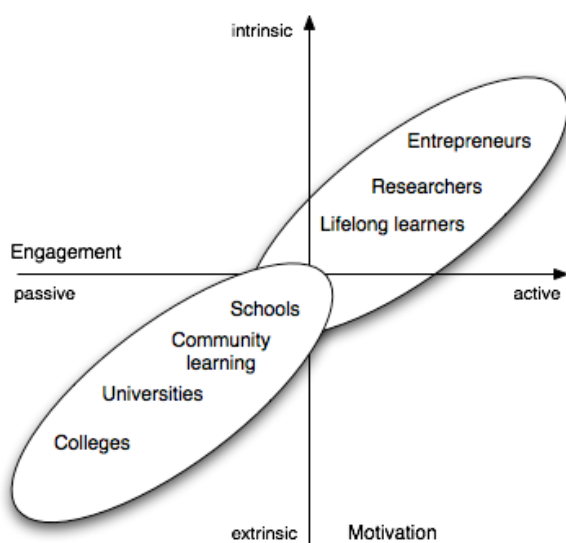

Figure 3. Engagement and Motivation

The immediate working environment is a crucial part of the mix that enables learners to engage with peers and their own reflective thought. It is this engagement that links to those deep flow experiences that Mihayli Csikszentmihayli [2,3] describes in his work on happiness. Flow experiences provide the fuel for reflection on experience and contributes to the happiness of the individual. When engaged in a flow experience the individual is completely absorbed and working at their limit of capability. The more flow experiences (see fig. 4 below) our students have the more happy, and engaged with University life they will be and the more likely to complete their studies successfully.
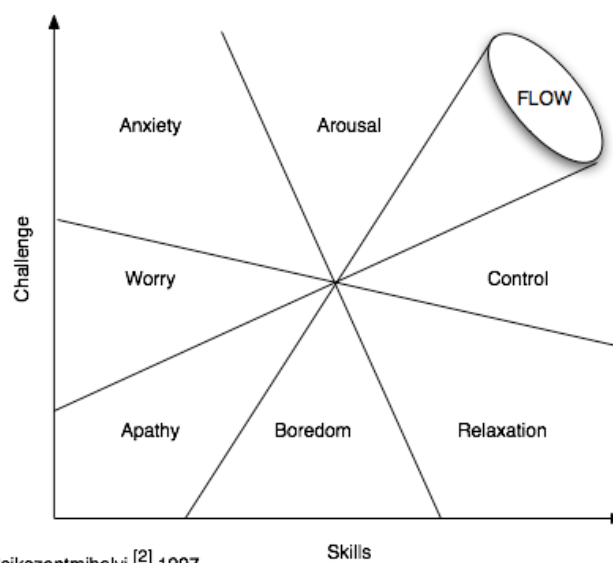
Csikszentmihalvi [2] 1997

Figure 4. The concept of Flow

These flow experiences will have basis in the interactions with others - staff and students – the learning challenges faced in relation to the skills possessed, and be set in the context of a working environment that provides stimulation and support to appeal to the range of need in the diverse student body. The developments described in this paper contribute meaningfully to that working environment and set a context in which students will have more fulfilling experiences that support a higher level of engagement.

3. The Saltire Centre

3.1 Concept

The new building at Glasgow Caledonian University, The Saltire Centre, incorporates the thinking and products of the SAS project, the underlying educational paradigm of conversational learning that led to the development of the Learning Café, and combines these with a fresh approach to 21st century information and use of technology.

The building will deliver the full range of library services. However it does this in a way that focuses on people and the process of learning, putting the emphasis here, rather than on the storage and management of resources. The Centre makes extensive use of open access compact shelving systems to house much of the bookstock. Housing the book stock in this highly space efficient way is crucially important as it frees up a considerable amount of space in the new building yet still provides access for borrowing and browsing. This has enabled the University to provide 1800 study spaces, a vast improvement as compared with the 950 or so currently available.

The Saltire Centre also provides a single point of access to all services for students. The SAS project has been fundamentally important in providing this single point of

access as it has enabled self-service access to a wide range of services.

In addition to being a library, providing access to services the Saltire Centre is also a learning centre and social heart to the Campus. This is not simply about more study space it's also about variety and flexibility and creating spaces with a broad range of purposes from highly active to individual, contemplative places for quiet reflection [7]. The overall concept is primarily built around the learner as an individual and recognises the needs of individuals as learners. The concepts of integration, mentioned earlier, and transforming service to experience inform the mutli purpose nature of the building and the diversity of provision.

The importance of social learning and the effect that environmental design can have on setting the scene for, and enabling social learning cannot be overemphasized. Whilst many activities take place in higher education to support students in holistic personal, and skills development, institutions in general rarely take a strategic approach encompassing space, technology and human support to student development. Such development, at the personal level, relies on practical opportunities to interact with peers, tutors, and associate professionals in order to play with ideas and concepts and test personal understanding. These are key activities we are aiming to support in the learning facilities of the Saltire Centre at Caledonian.

The new building also has a role in providing a 'social heart' to the campus. The Learning Café is replicated in the Saltire Centre on a grand scale in a 600 seat space. This space doubles as the 'services mall' providing the integrated access to services that has been driven by the SAS project. The services mall is an important innovation for the University. It covers 2500 sq metres and is 9 metres high. A genuine 'marketplace' or 'market hall' of a space.

3.2 The Building

The Saltire Centre has a floor area of 10,500 square metres spread over 5 floors . The ground floor, level 0, is the innovative services mall described briefly above. The building is entered by a bridge at level 1 where there is an exhibtion space, an open plan office for the 90 or so staff who run the building, and some of the information materials and learning space. Floors 2 to 4 all have similar layouts, but different ambience, and provide a variety of learning spaces from active conversational to quiet reflective. Each of floors 2 to 4 has a bank of compact shelving as well as bookstock on open access on open shelving. The sound gradient in the building ranges from interactive on floor 0 to silent on floor 4. The ability to provide and maintain different levels of activity and associated noise has been achieved by constructing a building within the building itself. Floors 1 to 4 are sealed off from the marketplace by a double skinned 'resource wall' extending up through the atrium of the building. This wall , as well as serving to contain nosiy activity within the ground floor, also houses some of the open access bookstock. Access to the higher floors in the building is via a copper clad tower

containing lift and stairs that has wooden bridge connections to each of floors 1 to 4. The whole building is open flexible space, the only fixed items being the compact shelving and printing facilities on each floor. Consequently the success of building depends on the strength of its interior design and the type and configuration of the furniture used in the building – more on this later.

The Saltire Centre is positioned between two existing tower blocks. In recognition of the central importance of this facility to our overall strategy for student engagement the building can be accessed from adjacent buildings at levels 1 and 4. This poses some problems for a building that delivers library services it in terms of security. Rather than restricting access to the building the extensive use of technology ensures that we can maintain security as users exit from the building.

3.3 Design and operation of the Saltire Centre

The ground floor services mall is a key part of the Saltire Centre providing a one stop access point for all services for students. On entering the building at level 1 users can see down into the services mall where the main service desk is based. Access to this desk requires users to come down into the mall via the lift or stairs. At the point of exit into the mall there are a number of self service kiosks where users can obtain information, or undertake transactions, for a wide range of services as result of the work of the SAS project. Alongside this provision there are self issue-self return machines for handling book transactions. These machines have already been piloted in the current library building and have worked successfully.

At the service desk users can get help on the full range of student services provided by the University from learning support to careers counselling and guidance. The service desk has been designed to be welcoming to users and to provide flexibility of provision. The desk has a main section and two satellites. At busy times Learning Services staff will make use of all of these facilities but at less busy times students will be able to use the satellite desks as additional study space. The desks also have lighted glass fronts with colour can be varied to signal a range of uses or service availability. The main desk also incorporates seating in an attempt to make this more of a shared facility between the student and the member of staff.

Enquiries that are likely to take more than 4 or 5 minutes to resolve or require specialist support will be referred to one of the three pods in the mall. These are semi private inflatable structures that can be used for consultations of around 15 minutes. If more privacy is required then the services mall has 6 private consulting rooms, and adjacent to the Saltire Centre, with its own access from it, is the current University counselling suite. The Saltire Centre therefore provides a wide range of levels of support for students to the full range of integrated student services.

The services mall also includes a café servery, a range of study space from formal to informal, and around 40% of the bookstock in compact shelving as well as access to latest

copies of serials. This part of the building is truly multifunctional.

Considerable thought has been given to the interior design of the building. Interior design is crucially important. With an overall internal concept of the building as a 'City' (well it is 10,500 square metres across 5 floors) the building has districts, zones, edges, and landmarks to help users intuitively understand and navigate the it. The large ground floor services mall has two streets running through it to aid use and navigation of the space. One of these streets is defined by specially commissioned street umbrellas that provide both light for those sitting under them and also serve to guide the eye of the first time visitor at level 1 through the level 0 space to the location of the services desk. Within this City theme each floor has an identity that gets calmer the higher you go. Subtle signals are used to obtain a calming effect on the ambience of the space at each level. The north facing external glass wall on floors 1 to 4 has a number of panels of coloured glass with hotter colours on the lower floors and cooler colours towards the top of the building. These colours are echoed in the carpet on each floor and in the lighting of the sound absorbing ceiling baffles. Acoustic signing is used at entry points – the edges – on each floor.

The Saltire Centre is a digital building. In addition to the wired network of 1800 ethernet points it has a pervasive 54g wireless network that will enable more intuitive 'natural' use of technology, including mobile devices such as PDAs and Tablet PCs and the other communications devices which are today only under development. These devices will be loaned to users from the services desk in the mall at level 0 fro use throughout the building. The building also has IP telephony and makes use of radio frequency identification (RFID) for book stock management.

4. Why the Saltire Centre?

Those familiar with the word Saltire will know that this is the Scottish flag that carries the cross of St Andrew. The Saltire Centre is of course a Learning Centre and Glasgow Caledonian Learning Centre was its temporary name during the building works. However in the light of the multipurpose nature of the building and the fact that it represents a bold strategy by the University to address a range of issues found throughout UK HE it was felt that an enduring, authoritative name was appropriate. Encapsulating the multipurpose nature of the building is difficult without resorting to an acronym. Saltire is therefore a loose acronym for what the University hopes to achieve with this building.

It is firstly about our Students and the Services we aim to provide them with. It also concerned with Active approaches to Learning and to Teaching having its roots as it does in the importance of conversational learning. The approach to Information in the building is a bold attempt to address the information age. Whilst digital information grows apace we are still faced with a legacy of paper that we need not only to house but to provide access to. The Saltire Centre attempts to do this. The building is also about Research in two respects. It

will the spoken word research project, one of the major projects at Caledonian, and it is also the repository of our information base. Lastly, and importantly, the Saltire Centre has a key role in student Engagement. The key reasons and purposes of the building, therefore, led to the name of the building. The word saltire means to jump and to dance and with this building Glasgow Caledonian is jumping ahead of the rest of the sector. The University crest carries an ermine Saltire and so this is not new to the University but builds on what we have achieved since University status was gained in 1993.

4. Conclusion

Through time the architecture of educational buildings has reflected the status, priorities and goals of the institutions they house. The intention, at Glasgow Caledonian, is to create a learning environment, which both meets our functional requirements and is a statement of our purposes. The Saltire Centre will place learning and scholarship at the heart of the campus and will address the key issue of service integration at the user interface and, most importantly, provide the basis for transformation from a service based culture to one which focuses on the experience of the user making learning in the University context a lifestyle choice [6].

We have undertaken considerable preparation for this building but inevitably we will be changed by it.

> "We shape our buildings, and afterwards,
> our buildings shape us."
>
> Winston Churchill

Or as Buckminster Fuller wrote:

> "Reform the environment;
> Stop trying to reform the people.
> They will reform themselves if the
> environment is right."

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