

### Timetabling Review

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#### 1. Background

A new timetabling system based on SITS was introduced to academic staff and students in September 2010: this system was a replacement for the CMIS room bookings system. By managing timetables in SITS the following additional benefits were expected:

- Inclusion of seminar and lab schedules
- Unified online timetables
- Earlier publication of timetables to students.

Aspects of timetabling functionality had been released to teaching office staff earlier in the year, allowing them to enter teaching pattern information into the system. The release of the room scheduling functionality was delayed for a variety of reasons and this contributed to the subsequent problems that we experienced in September 2010.

Previously there was no electronic method of producing or distributing timetables. Across the University there were different methods of providing online timetables, with some areas such as CMP having an online personal student checker, and FOH making heavy use of Blackboard and notice boards. There was no consistency across the campus on how timetables were delivered to Students, which created problems for students studying across schools.

In order to deliver electronic timetables all schools have had to adhere to a single system. In order to deliver timetables to groups schools are now required to allocate seminar groups via the system. Previously, schools used a range of paper and electronic methods to allocate and manage groups.

An additional requirement has been to migrate the software used for room booking to SITS. In addition to migrating the functions to support central room booking it has been necessary to put school based rooms on the system – this is another aspect of change where previously schools managed their own rooms via local systems.

The typical problems encountered included late publication of timetables, incomplete timetable information, room and module clashes, inappropriate room allocation and poor room utilisation.

From September to December 2010 the focus of development activity for the SITS team was aimed toward resolving the problems with timetabling and ensuring a smooth timetabling experience for semester 2. This work has included an upgrade to the SITS system, development of additional functionality, fixing erroneous processes in the system and correcting data errors in the system. The work culminated just before Christmas with a student scheduling workshop, attended by staff from all teaching offices and support staff from the development team and planning office. As a result of this final push we were able to release student timetables before Christmas.

Alongside the system based issues related to the introduction of electronic timetables there have been other contributing factors to some of the difficulties which were experienced in semester one.

#### 1.1. Increased staff student ratios

Increasing staff student ratios without increasing the room stock, or re-working it to account for smaller seminar groups, has put additional pressure on the provision of centrally bookable rooms.

## **1.2. Slotting system changes**

The changes to the slotting system have required more re-working of timetables than would previously have been required. Previously timetables were copied from year to year and then adjusted where required – rather than having to start from scratch.

## **1.3. Exceptions**

The use of local agreements and out of slot teaching patterns has put additional pressure on the process. Where 90 min slots have been requested this removes the ability for allocated rooms to be used for the remaining time. There is currently no strong process to ensure, encourage or enforce adherence, the exceptions then putting additional pressure on room resources.

## **1.4. Resourcing**

The lead developer within the SIS team became unavailable at a critical time, and has since been unavailable due to a long term absence. Our technical lead from Tribal also left. This has resulted in both the UEA team and the Tribal team being required to pick up the work and unpick various processes. At present the SIS team has three people on long term absence.

For semester one some delays were introduced as a result of faculty timetabling staff not being available due to annual leave. With the move to earlier release of timetables the availability of staff at key times needs to be considered in future.

## **1.5. Planning**

Some areas of the university found it particularly difficult to schedule students on courses, Science particularly, as a result of the way common modules are used. In one case a common module was part of over thirty routes!

## **2. Actions**

In response to a variety of system errors and the above issues a set of responses have been identified and actions taken:

### **2.1. Communication**

During the setting up of semester one timetables it became apparent that communication between the project team and key users was becoming disjointed. As a result a Timetabling Expert group has been setup. This group is used to both advise on development priorities but also to act as a conduit to pass information back to the schools. The SIS team now has three main communication and decision making channels:

- SIS Project Board
- Timetabling Expert Group – representation of Teaching Office Timetabling Staff
- SIS Users email list – all staff using the Student Records side of SITS

### **2.2. Training**

Due to a staff member leaving, the SIS team were without a trainer during the critical semester 1 period. This post has subsequently been filled. As a result the SIS team have ensured all users have been re-trained.

### **2.3. Workflows**

The SIS project team have engaged with users to understand where existing workflows on the e:vision software are unclear and have led to difficulties, frustration or data errors. Where technically possible, and with the resources available, the e:vision tasks have been re-written to improve the workflows and remove ambiguities and improve data checking.

### **2.4. Data Analysis**

During semester one timetabling and in preparation for semester two the SIS team have undertaken extensive data analysis. This analysis is to both improve data quality but also to understand the impact changes to the system or changes to University processes have on the timetable.

### **2.5. Development**

A range of further developments have been identified and prioritized by the expert group. The developments undertaken are identified in the attached Project Progress Report.

## **3. Current Issues for Consideration**

### **3.1. Data validation**

The SIS team are currently undertaking extensive checking of school data to ensure teaching patterns are setup correctly. For semester two this identified around 2000 errors which would have had varying levels of impact on the quality of timetables or the availability of suitable rooms.

**Tools to enable faculties to check and validate their own data need rolling out to enable faculties to undertake checking themselves.**

**Resource will be required in the SIS project team and CIS Reporting team to enable this work to be scheduled.**

### **3.2. Faculty Resourcing**

It has been noted from several sources that the introduction of an electronic system has changed the skill set required for those undertaking timetabling within faculties. Converting academic requests into definitions within SITS and setting these up correctly involves a higher level of awareness of the system and of computer skills than is always present.

**Faculties need to ensure staff working on timetables are adequately trained and have the right skill set to undertake both the planning and technical parts of managing timetables.**

**Faculties need to plan to ensure key staff are available at key times to ensure timely release of data to students. This may require setting up a University-wide schedule of key dates for the release of timetables.**

### **3.3. ISD Resourcing**

The resource required to deliver the current development requests for timetabling, and other aspects of the student record system far exceed the resource available within the development teams. ISD are working to re-allocate staff as described in the attached Progress Report, but this is only a short term solution and will have a negative impact on other areas of ISD work.

**The university needs to understand the additional resource required to deliver enhanced systems to students, academic and administrative staff and ensure that a suitable level of resource is available with ISD.**

**3.4.ACAD Resourcing**

As extra modules within SITS are implemented the first line support for these needs to be handed over from the project team to the central administrative units. The addition of timetabling to the support provided by the academic division has had a significant impact on the responsiveness to user queries with a subsequent impact on the project team.

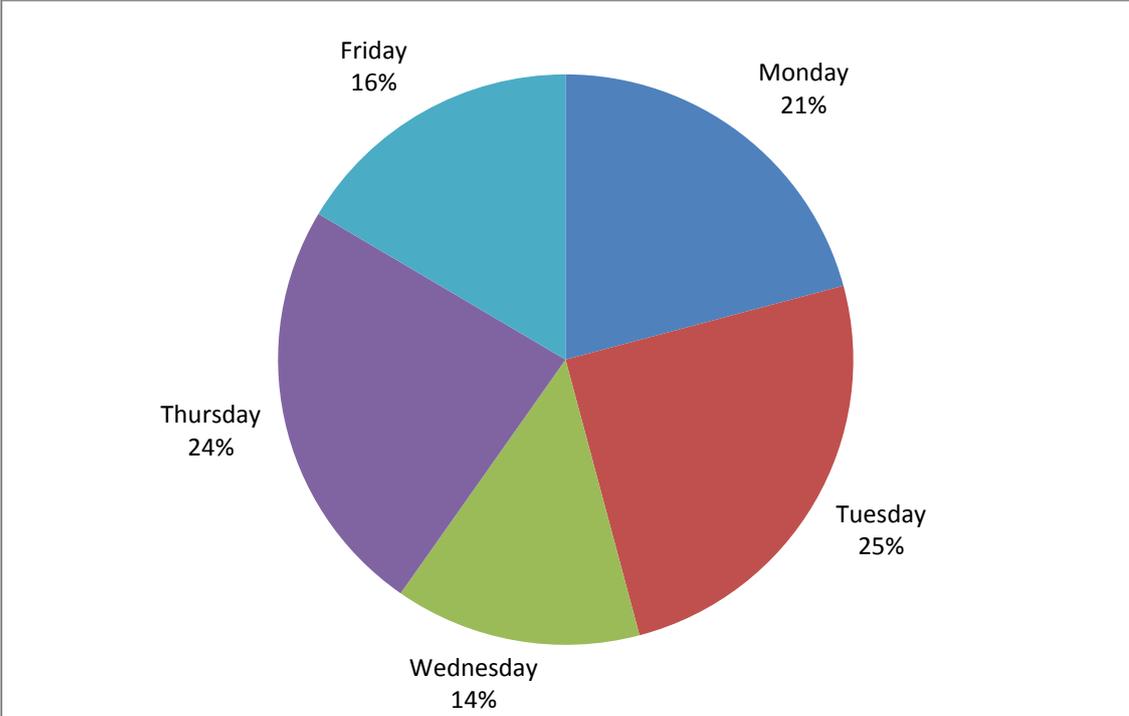
**The university needs to understand the additional resource required to deliver enhanced systems to students, academic and administrative staff and ensure that a suitable level of resource is available within the academic division to handle the front line support of users.**

**3.5.Planning**

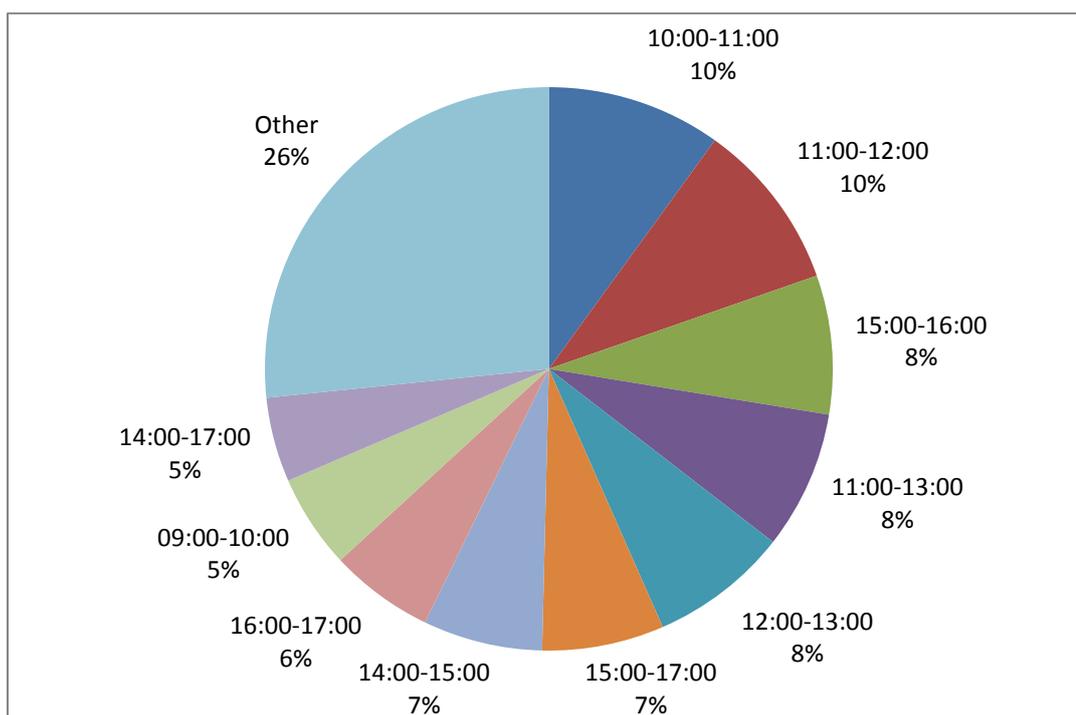
At present room allocations are undertaken twice a year. This has complicated issues with allocating rooms and scheduling students for year-long modules. In order to simplify the process and ensure students have access to timetables earlier the SIS Project Board has agreed that timetables will be produced and scheduled once per year.

**Faculties need to ensure adequate staffing levels over the summer period to work on developing and checking timetables for early release.**

ISD have undertaken preliminary analysis of semester two timetable requests to look for patterns which will affect the availability of resources. This work has uncovered several patterns which will directly impact on the ability of the system to allocate rooms in suitable locations. The following graph shows the split of room requests by day and by hour for the busiest day (Tuesday)



### Teaching requests by day



### Teaching request by Hour (Tuesday)

The pattern that appears is that there is a significant peak set of requests between 10:00 and 13:00 and these are concentrated on Tuesdays and Thursdays. With the current quantity of requests it will be impossible to room all requests in local locations i.e. HUM courses in the ARTS or nearby buildings. At other time of the day and week the number of requests is very low and there will be more rooms available than that requested.

**At present there is no central management of timetables which would enable schools to be encouraged to level their resource requests across the day and week. This needs addressing if complaints about travel time between rooms and the suitability of rooms are to be avoided and if we are to make better use of our room stock. At the recent SIS Board the Planning Office agreed to take on the task of further analysing this data.**

At present some areas of timetabling are being manually entered by the SIS project team. This is particularly in areas where the timetables are complex (MED and AHP). The project team will need to work with users in the future to ensure timetables are setup correctly in future to enable schools to undertake this work themselves.

**Resourcing of engagement work with faculties early on or before timetabling the 2011-12 academic year needs to be factored in to the work of the SIS project team.**