2002 SURVEY OF COMPUTERISED TIMETABLING IN HIGHER EDUCATION

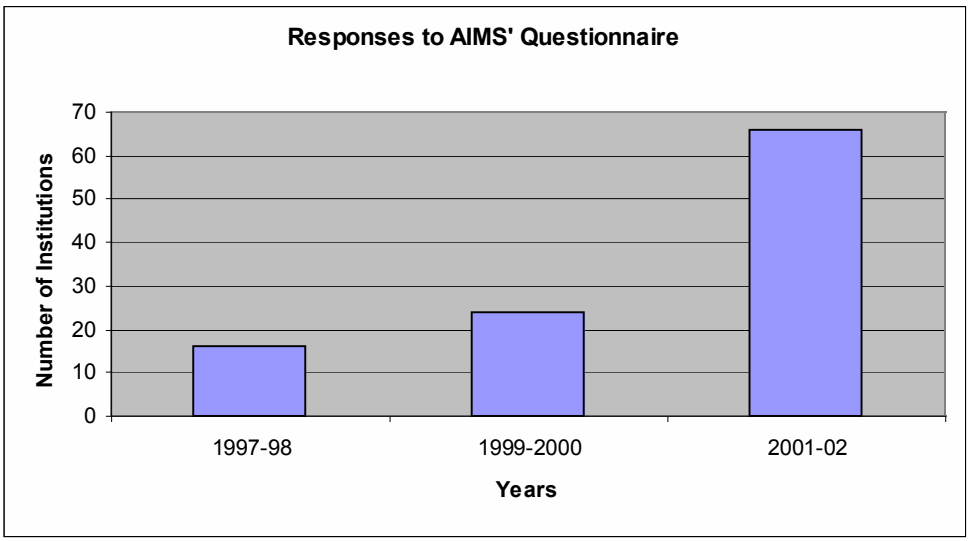
DATA FROM ALL RETURNS

INTRODUCTION

This was the third national survey by AIMS of timetabling practices in HE. The first survey (1997) attracted sixteen replies. The second (1999) attracted twenty-four. This survey has attracted sixty-six. This growth of interest is illustrated below. It reflects an increasing level of interest in computerised scheduling that AIMS and others have detected in universities over the last 18 months.

The outcome of this survey has now (October 2003) been produced in PDF format and made available to the entire HE community. For convenience in the conversion process, the report has been split into two. The first part, pages 1-12, summarises the responses. The second part, pages 13-31, shows the unedited returns. If you require further information about AIMS, please see the AIMS website: http://www.aims.eu.com .

All participating institutions were promised a copy of the raw data, in anonymous form. Most of this document is that data, with minimal editing. Some questions were unanswered, so although the responses from each institution were added in the same order for each question, associating responses to different questions by their position in the list may be incorrect because of missed answers.



In previous surveys, AIMS has categorised institutions by size. The same categories have been retained, but this year, a fifth category has been formed, retaining the pattern of dividing at multiples of 5,000 students. The divisions are based on the HESA returns.

Name and Size of Category (total students)		**Number of responses**		
		1997/98	*1999/2000*	*2001/02*
Small	≤ 5,000	1	1	9
Medium	5,001-10,000	6	9	22
Large	10,001-15,000	7	10	16
Very Large 1	15,001-20,000	2	4	13
Very Large 2	≥20,001	N/A	N/A	6

Although this division is based on the numbers of FTE students as reported to HESA, it might be misleading in terms of the demands on the timetabling system. Some institutions have larger proportions of part-time students so data collection, at least, may be more complex that for the equivalent number of full-time students. However, the complexity of the scheduling problem depends on the number of events to be scheduled, and this is probably reflected accurately in the FTE student numbers.

INSTITUTIONS RESPONDING IN EACH SIZE CATEGORY

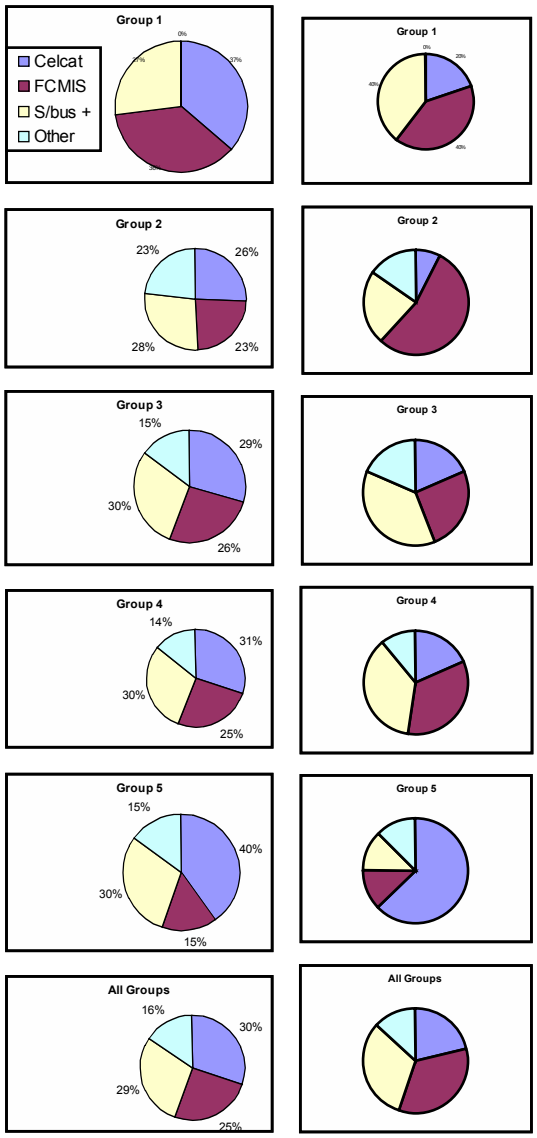
The institutions have not been identified in the summaries of data that they provided. Institutions have been grouped by numbers of FTE students for convenience. This might reflect institutional culture, but the workload in scheduling increases with the number of scheduled events and is therefore influenced by the actual numbers of students and the numbers of courses scheduled.

NUMBER OF FTE STUDENTS

≥ 20,000	15-20,000	10-15,000	5-10,000	≤ 5,000
1. Leeds Metropolitan 2. Manchester 3. Nottingham Trent 4. Open 5. Sheffield Hallam 6. UWE, Bristol	1. Anglia Polytechnic 2. Birmingham 3. Cambridge 4. Cardiff 5. Central Lancashire 6. KCL 7. Liverpool 8. Middlesex 9. Nottingham 10. Salford 11. South Bank 12. UCL 13. Wolverhampton	1. Brighton 2. Coventry 3. Durham 4. Galway, NUI 5. Glamorgan 6. Greenwich 7. Hull 8. Imperial, London 9. Loughborough 10. Newcastle upon Tyne 11. North London 12. Oxford Brookes 13. Queen's, Belfast 14. Thames Valley 15. UEL 16. Warwick	1. Aberdeen 2. Bangor 3. Bath 4. Birkbeck, London 5. Bournemouth 6. Bradford 7. Buckinghamshire Chiltern University College 8. City 9. East Anglia 10. Essex 11. Heriot-Watt 12. Lancaster 13. Napier 14. QMW, London 15. Robert Gordon 16. Royal Holloway 17. Stirling 18. Surrey 19. Sussex 20. UMIST 21. University College, Northampton 22. York	1. Abertay, Dundee 2. Buckingham 3. Imperial College, Wye Campus 4. Institute of Cancer Research, London 5. RF & UC Medical School CHIME (UCL) 6. School of Pharmacy, London 7. SHTM, London 8. SOAS 9. Swansea Institute of HE

SUMMARY
Group 1 (> 20,000 Students)
Group 2 (15,000 to 20,000 Students)
Group 3 (10,000 to 15,000 Students)
Group 4 (5,000 to 10,000 Students)
Group 5 (Below 5,000 Students)

The first question about timetabling (question 5) asked **which products were known about, and which were in use**. The six respondents in Group 1 mentioned three products - Celcat, Facilities CMIS and Syllabus Plus. Syllabus Plus was mentioned by three and the other products by four. It seems unlikely, however, that any university of this size would not have been aware of all three products. The other products listed were Infosilem, which is in use in at least two UK universities, and Adesoft, which is a French product that has not yet penetrated the UK HE market. The respondents mentioned neither of these. In Group 2, Adesoft and Infosilem were recognised by several respondents. Facilities CMIS was used in the majority of the 13 institutions in this group that responded, and the answers to the question about comparisons reflected its popularity. In Group 3, Celcat, Facilities CMIS and Syllabus Plus were recognised by nearly all respondents, Infosilem by about one third, Adesoft by only one. One correspondent also referred to IRIS, a Dutch product. In Group 4, approximately equal numbers used Facilities CMIS and Syllabus Plus. Half as many used Celcat and a few used other systems. Nineteen knew of Celcat and Syllabus Plus, sixteen knew of Celcat, four knew of Infosilem and none knew of Adesoft. In Group 5, the product in greatest use was Celcat. One institution used Facilities CMIS, one used Syllabus Plus and one used GTI, though in one Faculty only. Celcat and Syllabus Plus were well known, and Facilities CMIS was slightly less well known. One institution had heard of Adesoft.



Awareness Usage

The next question invited **comparisons between products**. The response by Group 1 reflected instead the current stages of development in the two institutions that responded. One indicated that many versions of Celcat were in use across the institution, while the other stated that their system was used mainly for room bookings, rather than scheduling. The latter point was also made by respondents in other groups. In Group 2, the edge in selection seemed to reflect

particular institutional needs, rather than scheduling capability, and one respondent noted that scheduling capability was not always required. In Group 3, Syllabus Plus and Facilities CMIS were equally represented and one institution spoke highly of Celcat except in the context of non-standard requirements, such as Nursing and Teaching courses. In Group 4, comments were restricted mainly to Facilities CMIS and Syllabus Plus. Two had preferred Syllabus Plus in selection, one because they felt that CMIS was more of a total management information system. Another said that the reporting facilities of Syllabus Plus had improved enormously, so they had decided not to change. Two preferred Facilities CMIS because of its perceived flexibility.

Question 7 asked **what advice should be given to anyone considering the introduction of computerised central timetabling**. In Group 1, it was to ensure support from all parts of the organisation, and to provide systems to guarantee that the information provided was reliable and timely. In Group 2, it was about the importance of strong management support, allowing enough time and having enough staff resource, having good communications systems and methods of data collection, and understanding what people expected from the system before deciding on what to purchase. Group 3 offered advice with similar themes to other groups: identify the needs of the whole organisation and the objectives of the system, have a formal project management team, involve the users, set targets, ensure good communications and reliable data. In Group 4, it related to the importance of getting academic staff on your side and of support from senior management (mentioned twice), the need for clear objectives (mentioned three times), the benefits of visits to as many institutions as possible and seeing as many systems as possible, asking the suppliers what the software cannot do, and what support they will provide, the need for internal technical support, and the importance of moving forwards cautiously. In Group 5, one said that the key users must be involved in all presentations. Academic and administrative perspectives differed. The software should be robust, and sufficiently powerful. Senior management must appreciate the importance of timetabling and allocate resources

Key Phrases overall:

- *Support from entire organisation*
- *Strong management support*
- *Clear objectives for the project*
- *Good communications*
- *Accurate data*
- *Adequate resources*
- *Do not rush*
- *Formal project management team*

accordingly. Departments must realise that the system cannot perform miracles. Sensible source structures and module descriptors are beneficial. The CTU should ensure that all timetable requirements have been submitted before starting to schedule.

Question 8 asked about **identifiable savings/benefits**. Group 1 respondents mentioned planning, course delivery and improved room booking processes and on-line room booking systems. In Group 2, most responses reflected the production of room usage data and the space modelling features, leading to better use of space and possible large savings. Other benefits were fewer clashes, and improved course planning and delivery. In Group 3 referred to reductions in the overall numbers of teaching rooms in use which created space for improved IT facilities, and improvements in planning, modelling and planning. In Group 4, fourteen institutions described savings or other benefits. One said that the system had "undoubtedly prevented institutional breakdown". Others mentioned greater flexibility, better use of space, staff savings, improved planning, fewer clashes, better course delivery and greater efficiency. In Group 5, the benefits included planning, efficiency, value for money and use of time and space by academic staff.

Key words and Phrases

- *Improved space planning*
- *Room usage data*
- *Space modelling*
- *Reduction of space needed*
- *Opportunities for improved IT rooms*
- *Improved course planning*
- *Improved course delivery*
- *Fewer or no clashes*
- *Flexibility*
- *Improved room-booking processes*
- *On-line room bookings*
- *Better use of time and space*

See also further question about benefits below.

Question 9 asked **where particular functions were based in the organisation of the institution.** In Group 1, the most popular location was the Estates Office. In Group 2, most functions were based in the Registry, rather than Estates, but a significant number indicated that most of the lecture scheduling was done in schools or faculties. Several used central software to allocate rooms to lectures otherwise scheduled by departments or schools: few, if any, allowed the system to schedule automatically. In Group 3, scheduling exams was most often done by staff in the Registry, lectures were mainly scheduled by Estates or Schools, ad-hoc room bookings and conference were mainly made within the Estates Department. In Group 4, most functions were based in the Registry, though lectures were often timetabled by Schools and most Conference room bookings made in the Estates Office. Several had a Common Services department for ad-hoc room bookings. In Group 5, most ad-hoc room

bookings and conference room bookings were made in the Estates Department. Lectures and exams scheduling was evenly split between the Registry and Schools.

Data entry in Group 1 was central in one university, but distributed in three. In Group 2, central and distributed data entry were mentioned equally often. In Group 3, of 11 responses, seven said data entry was central, two said both centrally and in departments, two planned to use both. In Group 4, data was entered centrally in twelve institutions, two pointing out that it was prepared in schools; in departments in four institutions; two scheduled in departments except for rooms, which were allocated centrally; and one said that data was entered both centrally and in departments. In Group 5, data was entered centrally in four institutions, with one intending to move to departmental entry, departmentally in two and by both in one.

Most of the largest institutions had distributed data entry. In smaller institutions, central data entry was more common but there are indications of a move towards distributed data entry.

For **CTU staffing**, Group 2 institutions typically had three or four central timetabling staff, supported by departmental staff. In Group 3, the number of staff employed in central timetabling varied from one clerical to 4.5 administrative. Up to 24,000 students (not FTE), 2,000 courses and 2,750 exams were scheduled. In Group 4, the number of staff employed varied from 0.5 to three plus one per school. The maximum load carried was 12,500 students, 2000 modules and 400 programmes. In Group 5, the largest number of timetabling staff identified was five, the smallest one. The number of students scheduled varied from 500 to over 4,000.

The question referred only to central staff. A considerable volume of timetabling work is carried out in departments, schools and faculties.

One large institution estimated that the total staff working on timetabling was approximately 28 FTE, centrally and in departments, including academic staff.

Describing **links to databases**, three out of four respondents in Group 1 said they had implemented or planned to implement links to a course or student databases. In Group 2, approximately half had linked their systems to other databases, such as a course database or a student database. In Group 3, five had not linked their systems to a course database and/or a student database, but three expected this to change, seven said they had, though in two cases the link was indirect. In Group 4, seven institutions had links between their timetabling system and a course or student database. Four more were planning this. Seven had no links and no reported plans. In Group 5, four institutions had linked their systems to other databases, or would be doing so soon. Two had not.

Linking timetabling systems to course, student or other databases is developing, with a majority now having links or plans to develop links

Asked about **output to the World Wide Web** (WWW), all respondents in Group 1 either had this implemented or planned. In Group 2, a slight majority had or had planned WWW output. In Group 3, seven already had this in some form, two were developing the feature, one said it was not very successful and one had not purchased the module. In Group 4, WWW output was provided by nine institutions, six had very limited output or had projects or plans to develop output, four had no web output and did not mention any plans. In Group 5, five had WWW output and two did not.

WWW output is provided by the majority in some form.

In Group 1, only one out of four **charged directly for space booked**. In Group 2, direct space charging occurred in approximately a third of the institutions that responded. In Group 3, one institution had introduced direct charges to user departments for the space they booked. Twelve did not charge, but two implied that they might reconsider this and one said that they charged for missed bookings. In Group 4, three institutions charged departments directly for the space they booked. Sixteen did not. In Group 5, none charged departments for the space they booked, although two said, "not yet".

Direct space charging is unusual, but more common in larger institutions.

- *Group 1 – occurs in one of the four that responded*
- *Group 2 – occurs in one in three, approximately*
- *Group 3 – rare*
- *Group 4 – rare*
- *Group 5 – not done*

In Group 1, none **scheduled specialist rooms such as laboratories**, leaving this to the main user departments. In Group 2, it was done in approximately a third of the institutions that responded. In Group 3, nine did not centrally schedule specialist rooms, one did and one would if requested. Two others scheduled IT labs only. In Group 4, eight scheduled specialist rooms, three more did this in some instances, one scheduled computer space, and seven did not have any control of this space at all. In Group 5, two did not schedule specialist rooms. Three did schedule them. One scheduled IT laboratories only.

Smaller institutions are more likely to schedule specialist space centrally

- *Group 1 – all specialist rooms scheduled by departments*
- *Group 2 – one in three (approx) central*
- *Group 3 – nearly all by departments*
- *Group 4 – approximately half central*
- *Group 5 – approximately half central*

In Group 1, the most common **benefit of computerised systems** was fewer clashes. Others included shared information and improved planning. In Group 2, the principal benefits were fewer or no clashes, speed, better delivery of information, Web output, flexibility and ability to make changes easily. In Group 3, of ten institutions that identified benefits, transparency or the accessibility of

Key words and phrases – benefits

- *Fewer clashes*
- *Shared information*
- *Communication*
- *Speed and convenience*
- *Transparency*
- *Better use of space and resources*
- *Management reports*

all information was mentioned five times, another mentioned shared information, four mentioned better use of space, and the same number referred to better matching of course needs and group sizes to resources and room sizes. Two mentioned utilisation reports, and there were four references to fewer or no room clashes or timetable efficiency. Other points made were the maximisation of student choice, staff and financial savings, and the advantages of web pages as "live" output. In Group 4, four implied that without computers, the system would be unworkable. Other points were reduced numbers of clashes, transparency, and fair allocation of resources. In Group 5, the benefits included savings in space rental or procurement charges, transparency, greater accuracy, and better availability via the Internet.

In Group 1, the most common **disadvantage** was the significant training requirement for new staff. In Group 2, disadvantages included departments that refuse to participate or continued to overbook and procedural difficulties such as missed deadlines. In Group 3, the disadvantages referred mainly to the difficulties of collecting valid data (three references), and internal difficulties such as a rigid slotting system and dependence on electronic links. In Group 4, the main disadvantage was the perceived loss of control by faculties. In Group 5, the disadvantages were complex software, academic departments that felt their control and flexibility was reduced, and the small number of people that had the knowledge and skill to use the software.

Key words and Phrases - Disadvantages

- *Frequent re-training as staff change*
- *Limited number of staff who can use the software*
- *Uncooperative departments*
- *Data collection difficulties*
- *Faculties perceive loss of control*

In Group 3, **constraints** did not seem to be a major difficulty. They included course regulations, fixed lecture times and space restrictions. The obstacles to removing constraints were custom and practice. Another constraints was the length of the university teaching day. In Group 4, most institutions mentioned constraints, such as departmental priority for certain rooms and site restrictions/multiple sites. The obstacles to removing the constraints were historic and cultural issues, inflexibility and unwillingness to cooperate. In Group 5, the few constraints mentioned did not seem major.

Key words and Phrases – Constraints

- *Mainly internal issues – custom and practice*

GROUP 1 (> 20,000 students)

The six respondents mentioned three products - Celcat, Facilities CMIS and Syllabus Plus. Syllabus Plus was mentioned by three and the other products by four. It seems unlikely, however, that any university of this size would not have been aware of all three products. The other products listed were Infosilem, which is in use in at least two UK universities, and Adesoft, which is a French product that has not yet penetrated the UK HE market. The respondents mentioned neither of these.

The comments in Question 6, which invited comparisons between products, reflected instead the current stages of development in the two institutions that responded. One indicated that many versions of Celcat were in use across the institution, while the other stated that their system was used mainly for room bookings, rather than scheduling. The latter point was also made by respondents in other groups.

Question 7 asked what advice should be given to anyone considering the introduction of computerised central timetabling. The advice was to ensure support from all parts of the organisation, and to provide systems to guarantee that the information provided was reliable and timely.

Question 8 asked about identifiable benefits. Respondents mentioned planning, course delivery and improved room booking processes and on-line room booking systems. In Question 9, the most popular part of the organisation for the service was the Estates Office. In Question 10, data entry was central in one university, but distributed in three. Three out of four respondents said they had implemented or planned to implement links to a course or student databases. All either had or planned output to the World Wide Web (WWW). Only one out of four charged directly for space booked, and none scheduled laboratories, leaving this to the main user departments. The most common benefit of computerised systems mentioned was fewer clashes, and others included shared information and improved planning. The most common disadvantage was the need to train the staff following any changes, such as a change of post.

GROUP 2 (15,000 to 20,000 students)

Adesoft and Infosilem were recognised by several respondents. Facilities CMIS was used in the majority of the 13 institutions in this group that responded, and the answers to the question about comparisons reflected its popularity. The edge in selection, as far as it could be deduced, seemed to reflect particular institutional needs, rather than scheduling capability, and one respondent noted that scheduling capability was not always required.

The advice to be given to institutions that were about to introduce computerised scheduling was about the importance of strong management support, allowing enough time and having enough staff resource, having good communications systems and methods of data collection, and understanding what people expected from the system before deciding on what to purchase.

Many comments were made about identifiable savings. The majority reflected the production of room usage data and the space modelling features, leading to better use of space and possible large savings. Other benefits mentioned were fewer clashes, and improved course planning and delivery.

Most functions were based in the Registry, rather than Estates, but a significant number mentioned schools or faculties, and a majority of the lecture scheduling was done there. Several used the central software to allocate rooms to lectures otherwise scheduled by departments or schools: few, if any, allowed the system to schedule automatically. Central and distributed data entry were mentioned equally often. Institutions typically

had three or four central timetabling staff, supported by departmental staff. Approximately half had linked their systems to other databases, such as a course database or a student database. A slight majority had or had planned WWW output from their systems. Direct space charging and scheduling specialist rooms such as laboratories were not popular, both occurring in approximately a third of the institutions that responded.

The principal benefits identified were fewer or no clashes, speed, better delivery of information, Web output, flexibility and ability to make changes easily. Disadvantages included departments that refuse to participate, departments that continued to overbook and procedural difficulties such as missed deadlines.

GROUP 3 (10,000 to 15,000 students)

Celcat, Facilities CMIS and Syllabus Plus were recognised by nearly all respondents, Infosilem by about one third, Adesoft by only one. One correspondent also referred to IRIS, a Dutch product. In comparing systems, Syllabus Plus and Facilities CMIS were equally represented and one institution spoke highly of Celcat except in the context of non-standard requirements, such as Nursing and Teaching courses.

The advice for those about to introduce computerised timetabling had similar themes to other groups: identify the needs of the whole organisation and the objectives of the system, have a formal project management team, involve the users, set targets, ensure good communications and reliable data.

Identified savings included comments about reductions in the overall numbers of teaching rooms in use which created space for improved IT facilities, improvements in planning, modelling and planning.

Organisationally, scheduling exams was most often done by staff in the Registry, lectures were mainly scheduled by Estates or Schools, ad-hoc room bookings and conference were mainly made within the Estates Department.

Of 11 responses to the question about data entry, seven said it was central, two said both centrally and in departments, two planned to use both. The number of staff employed in central timetabling varied from 1 clerical to 4.5 administrative. Up to 24,000 students (not FTE), 2,000 courses and 2,750 exams were scheduled. When asked if the system was linked to a course database and/or a student database, five said no, but three expected this to change, seven said yes, though in two cases the link was indirect.

As for WWW output, seven already had this in some form, two were developing the feature, one said it was not very successful and one had not purchased the module.

One institution had introduced direct charges to user departments for the space they booked. Twelve did not charge, but two implied that they might reconsider this and one said that they charged for missed bookings. Nine did not centrally schedule specialist rooms such as laboratories, one did, one would if requested, two others scheduled IT labs only.

Constraints did not seem to be a major difficulty. Those mentioned included course regulations, fixed lecture times and space restrictions. The obstacles to removing constraints were custom and practice. Some other constraints, such as the length of the university teaching day, were also mentioned.

Of ten institutions that identified benefits, transparency or the accessibility of all information was mentioned five times, another mentioned shared information, four

mentioned better use of space, and the same number referred to better matching of course needs and group sizes to resources and room sizes. Two mentioned utilisation reports, and there were four references to fewer or no room clashes or timetable efficiency. Other points made were the maximisation of student choice, staff and financial savings, and the advantages of web pages as "live" output.

The disadvantages mentioned referred mainly to the difficulties of collecting valid data (three references), and internal difficulties such as a rigid slotting system and dependence on electronic links.

GROUP 4 (5,000 to 10,000 students)

In this group, approximately equal numbers used Facilities CMIS and Syllabus Plus. Half as many used Celcat and a few used other systems. Nineteen knew of Celcat and Syllabus Plus, sixteen knew of Celcat, four knew of Infosilem and none knew of Adesoft.

Comments comparing different systems were restricted mainly to Facilities CMIS and Syllabus Plus. Two had preferred Syllabus Plus in selection, one because they felt that CMIS was more of a total management information system. Another said that the reporting facilities of Syllabus Plus had improved enormously, so they had decided not to change. Two said they chose Facilities CMIS because of its flexibility.

The advice that respondents would offer to other institutions that were about to introduce computerised timetabling related to the importance of getting academic staff on your side, the importance of support from senior management (mentioned twice), the need for clear objectives (mentioned three times), the benefits of visits to as many institutions as possible and seeing as many systems as possible, asking the suppliers what the software cannot do, and what support they will provide, the need for internal technical support, and the importance of moving forwards cautiously.

Fourteen institutions described savings or other benefits. One said that the system had "undoubtedly prevented institutional breakdown". Others mentioned greater flexibility, better use of space, staff savings, improved planning, fewer clashes, better course delivery and greater efficiency.

Organisationally, most of the functions were based in the Registry, though with significant lecture timetabling still done in Schools and most Conference room booking in the Estates Office. Several had a Common Services department that handled ad hoc room bookings.

Data was entered centrally in twelve institutions, two pointing out that it was prepared in schools; in departments in four institutions; two scheduled in departments except for rooms, which were allocated centrally; and one said that data was entered both centrally and in departments.

The number of staff employed varied from 0.5 to 3 plus one per school.

The maximum load carried was scheduling 12,500 students, 2000 modules and 400 programmes.

Seven institutions had links between their timetabling system and a course or student database. Four more were planning this. Seven had no links and no reported plans.

Web output was provided by nine institutions, six had very limited output or had projects or plans to develop web output, four had no web output and did not mention any plans.

Three institutions charged departments directly for the space they booked. Sixteen did not. Eight scheduled specialist room such as laboratories, three more did this in some instances, one scheduled computer space, and seven did not have any control of this space at all.

Most institutions mentioned constraints, such as departmental priority for certain rooms and site restrictions/multiple sites. The obstacles to removing the constraints were historic and cultural issues, inflexibility and unwillingness to cooperate.

For benefits, four implied that without computers, the system would be unworkable. Other points mentioned were reduced numbers of clashes, transparency, and fair allocation of resources. The main disadvantage was the perceived loss of control by faculties.

GROUP 5 (Below 5,000 students)

In this group, the product in greatest use was Celcat. One institution used Facilities CMIS, one used Syllabus Plus and one used GTI, though in one Faculty only. Celcat and Syllabus Plus were well known, and Facilities CMIS was slightly less well know. One institution had heard of Adesoft. No one was able to comment on how they felt different systems compared.

In offering advice to other institutions that were about to introduce computerised timetabling, one said that the key users must be involved in all presentations. Academic and administrative perspectives were different. The software should be robust, and sufficiently powerful. Senior management need to appreciate the importance of timetabling and to allocate resources accordingly. Departments must realise that the system cannot perform miracles. Sensible source structures and module descriptors are beneficial. The CTU should ensure that all the timetable requirements from the academics have been submitted before starting to schedule.

The benefits that were identified included planning, efficiency, value for money and use of time and space by academic staff. Organisationally, most ad-hoc room bookings and conference room bookings were made in the Estates Department. Lectures and exams scheduling was evenly split between the Registry and Schools.

Data was entered centrally in four institutions, with one intending to move to departmental entry, departmentally in two and by both in one. The largest number of timetabling staff identified was five, the smallest one. The number of students scheduled varied from 500 to over 4,000.

Four institutions had linked their systems to other databases, or would be doing so soon. Two had not. Five had WWW output, two did not. None charged departments for the space they booked, although two said, "not yet".

Two did not schedule specialist rooms such as laboratories. Three did schedule them. One scheduled IT laboratories only. A few mentioned constraints on the timetabling system, but they did not seem major. The identified benefits included savings in space rental/procurement charges, transparency, greater accuracy, and better availability via the Internet.

The disadvantages mentioned were complex software, academic departments that felt their control and flexibility was reduced, and the small number of people that had the knowledge and skill to use the software.