JISC Study of Shared Services in UK Further and Higher Education

Report 2:
The software currently in use for administrative systems in UK FE and HE

April 2008

Undertaken on behalf of the JISC

Duke & Jordan Ltd
with AlphaPlus Ltd, Mary Auckland, Chris Cartledge,
Simon Marsden and Bob Powell.

1 Executive Summary

1.1 Background

This report is the second of three to be produced in the first phase of the study for the JISC. The study covers the four home nations of the UK and has, in brief, the following objectives:

1. To describe the current landscape and the potential development of shared services across UK FE and HE.
2. To identify and characterise the marketplace for administrative systems.
3. To provide advice and guidance to management in UK FE and HE institutions about involvement in shared provision of services.
4. To inform future JISC and funding council work in supporting and assisting shared services.

The three reports in phase 1 have the following purposes:

Report 1	A description of the present state of usage of and planning for shared services in the delivery of administrative systems to FE and HE across the UK.
Report 2	An analysis of the administrative systems currently in use across the FE and HE sectors
Report 3	A description of the appetite of UK FE and HE for the use of shared services for the delivery of administrative systems in the future

Inevitably, there is some common material between the three, each of which we have written to be read by itself. Report 1 has the most extensive information on background and context.

1.2 Conclusions

1. The systems market for further and higher education is very fragmented. There are a large number of different suppliers across the range of systems we looked at. In some individual areas there are a considerable number of different suppliers. There is also remarkably little overlap of the products used between the two sectors.
2. The nine functional areas we consider in this report show a variety of patterns of use and market share.
3. In each of finance, student records and timetabling, the higher education market has one player significantly larger than any of the others and has a relatively small number of other players. The dominant player in each equivalent FE market has a smaller share than in HE and there are more of the smaller players.
4. CRM is the area which shows the least maturity. More than 40% of FEIs responding indicated that they made no use of a CRM and about half of HEIs responded the same way.
5. A large number of estates systems are in use and they typically have a low level of integration with other corporate systems. Only one product had more than a 10% share of either the FE or the HE market. A quarter of those responding from higher education said that no estates system is in use at their institution.
6. The area of VLEs shows complete dominance of the market by Moodle and Blackboard. In further education, Moodle has just over half the market with Blackboard having a further 30%. In higher education, Blackboard has about three quarters of the market and Moodle just over 10% of the remainder.

7. The only open source product to have any significant market share of any of the functional areas considered is Moodle.
8. There is a significant correlation between the supplier of the HR system to an institution and the supplier of the payroll system, the two often being the same. The fragmentation of the two markets reflects the sizeable number of suppliers in these areas.
9. In FE, three library systems account for just under three quarters of the market. In HE, four library systems take all but 3% of the market. Of these four systems, only one is in the top three in FE.
10. Overall, there is a much wider variation in the systems in use in further education than in higher education. In several areas within higher education, there are market leaders which have substantial market shares. In further education, on the other hand, there are few areas where a small number of products dominate.
11. The variety of systems in use for library management, student records, timetabling and VLE markets in FE and HE is less than those used for finance, HR, payroll, estates and CRM. This probably reflects the fact that the first four systems areas are largely special to education, whereas the other five systems are used in all kinds of business.

Contents

This study on shared services was undertaken for the JISC by Duke & Jordan Ltd together with AlphaPlus Ltd, Mary Auckland, Chris Cartledge, Simon Marsden and Bob Powell.

We are very grateful to all those who gave their time and knowledge during our consultations to help us prepare this report.

2 Context

2.1 The study

This study for the JISC is in two phases and covers the four home nations of the UK. The objectives of each phase are shown in the table below.

Phase	Objective
1	1. To describe the current landscape and the potential development of shared services across UK FE and HE. 2. To identify and characterise the marketplace for administrative systems.
2	3. To provide advice and guidance to management in UK FE and HE institutions about involvement in shared provision of services. 4. To inform future JISC and funding council work in supporting and assisting shared services.

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3 Introduction

3.1 The administrative systems considered

The ITT for this work refers to administrative systems but does not provide a definition for these. We have chosen, in agreement with our JISC sponsor, to define administrative systems as those systems for which information is gathered by UCISA in the annual survey by its CIS Group of corporate information systems in use in HEIs. These systems are

- Finance
- Student Records
- Timetabling
- Human Resources (HR)
- Payroll
- Estates
- Library Management
- Virtual Learning Environment (VLE)

- Customer Relations Management (CRM)

VLE and Library systems are often seen as academic rather than administrative systems: however, they are usually so closely integrated with other administrative systems that it is appropriate to include them.

4 Collecting the data

The first Phase of our study has involved interviewing a large number of witnesses and carrying out a number of web surveys. For this report, we sought to identify the administrative systems in use by colleges and universities. We were fortunate to be given access by UCISA to the survey of their members undertaken by their Corporate Information Systems group in the autumn of 2007. This survey enabled us to identify the systems in use by about 50% of the HE sector: UCISA graciously reopened the survey in order to allow some further additions and corrections to the data in the survey. We sent a web survey out through the JISC RSCs to the IT managers with whom the RSCs have contact: these managers are predominantly in the FE sector. In this survey, we sought to identify the use of the same set of administrative systems categorised in the UCISA survey.

The data focuses on the suppliers of the software in use, not on the reasons for its choice or on other, related issues, and this report reflects that limitation.

5 The institutions who responded

92 institutions replied to the UCISA survey, of which all but one were HEIs. 77 institutions responded to our survey sent out through the RSCs with data that was complete or largely complete: there were a number of institutions which sent in more than one return and a number of people entered the survey but failed to complete it. Of the 77 responding through the RSCs, one had also responded to the UCISA survey and, of the remainder, all but 2 were FEIs.

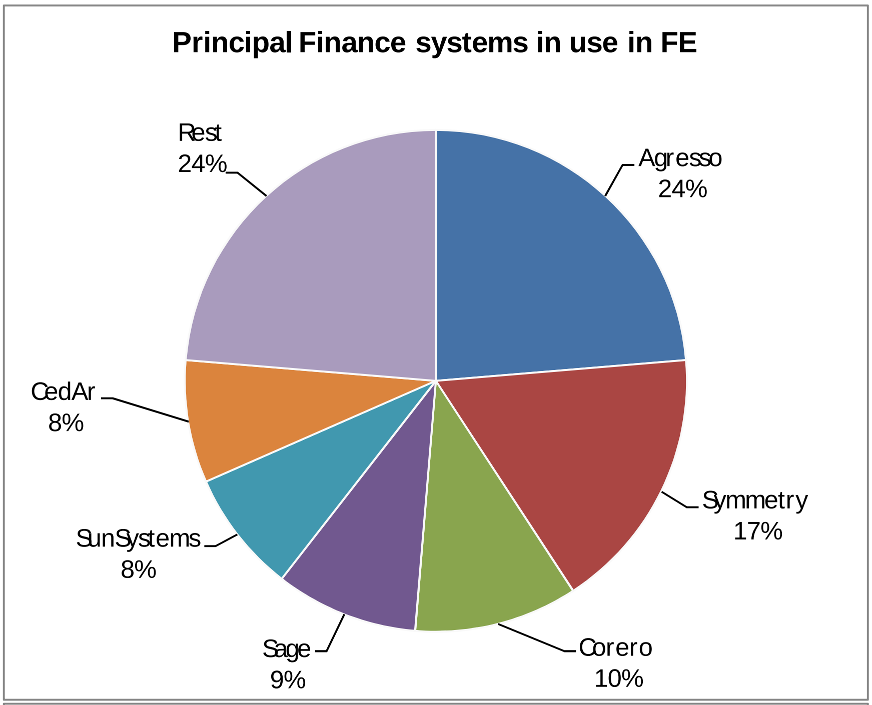
Our responses can therefore be categorised by country as follows:

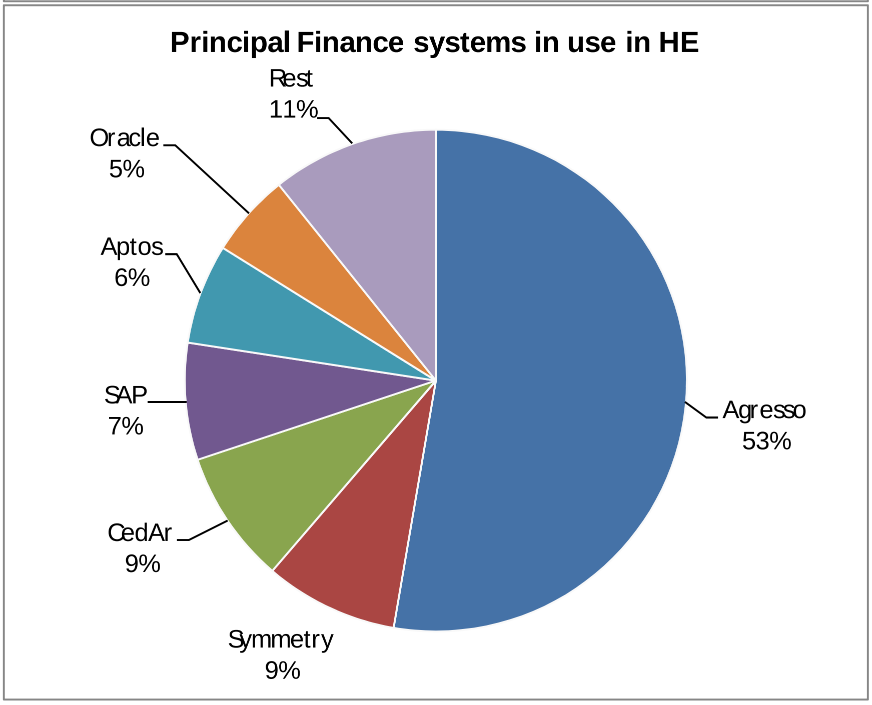
Sector	**England**	**Northern Ireland**	**Scotland**	**Wales**	**Grand Total**
FE	62	1	13	0	76
HE	74	2	11	6	93
Total	136	3	24	6	169

6 Which suppliers provide the systems and the extent

In this section, we present the results of the surveys. Results are presented as percentages: the low percentage tails of the distributions, which in some cases are long, are aggregated

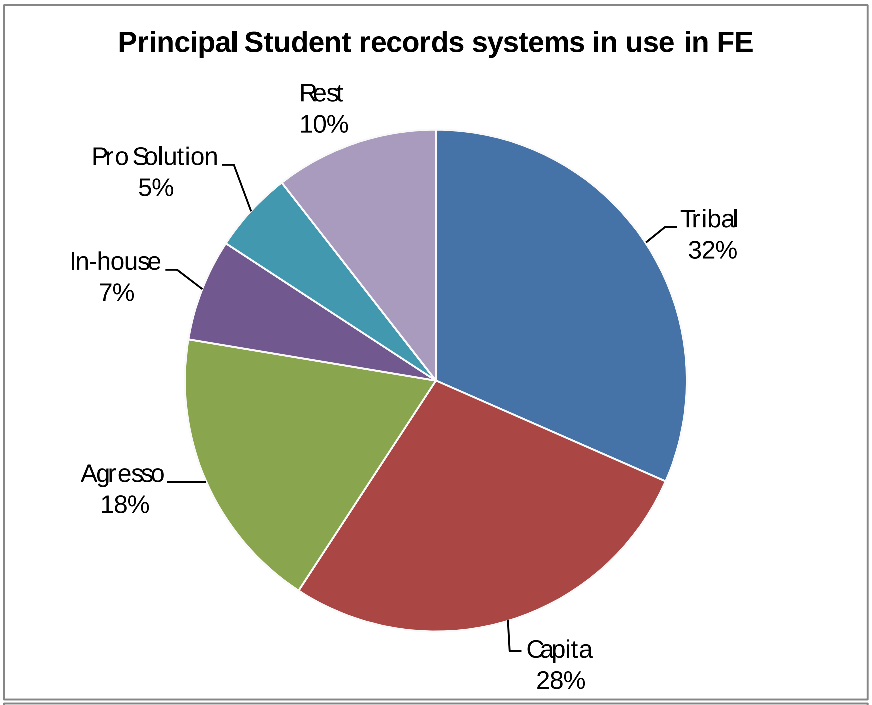
6.1 Finance systems

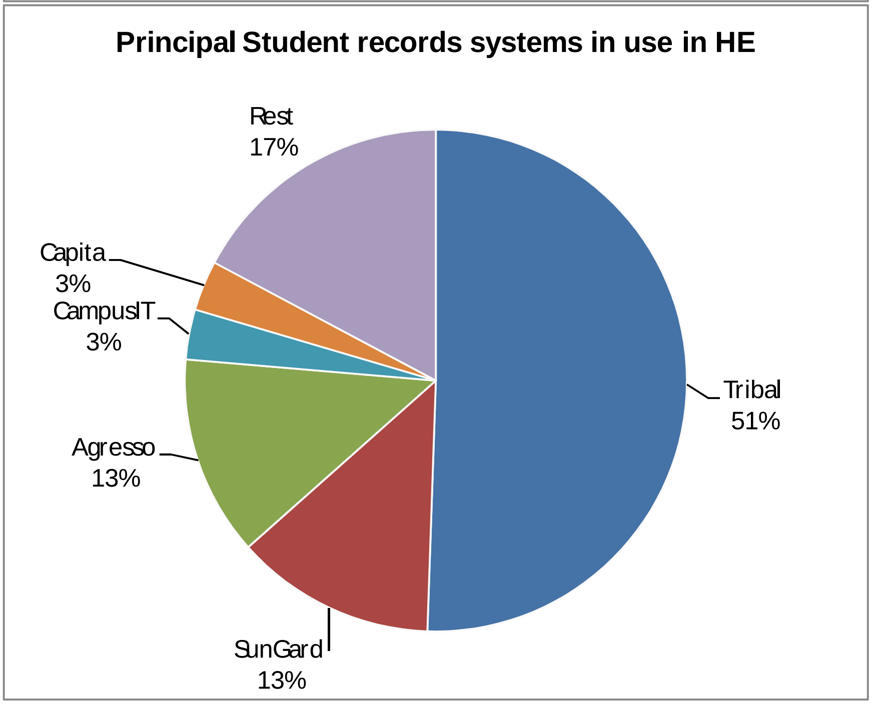




Agresso and Symmetry are the dominant players in each sector. It can be seen that Agresso dominates the HE market whereas the market is more split in FE.

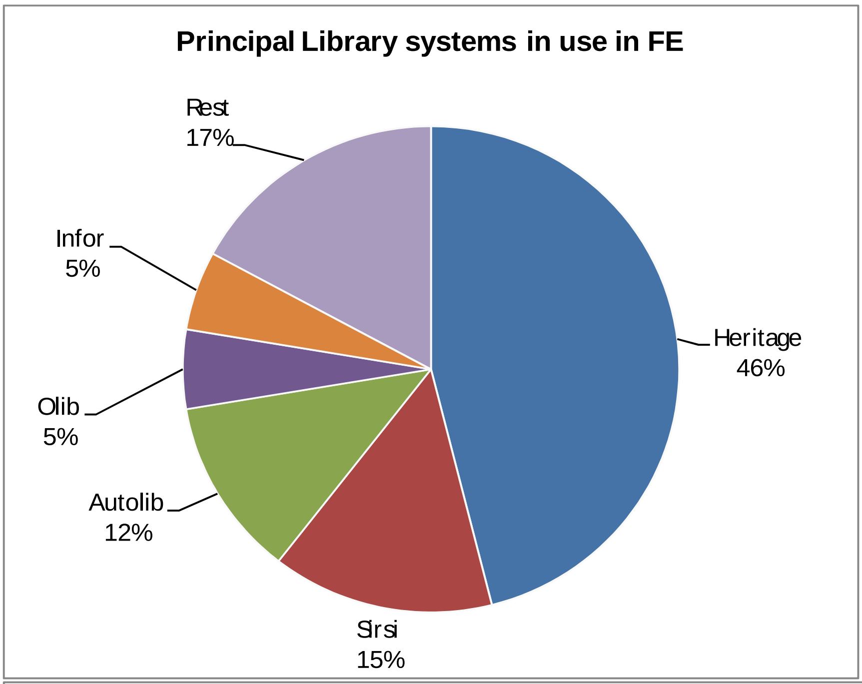
6.2 Student Records systems

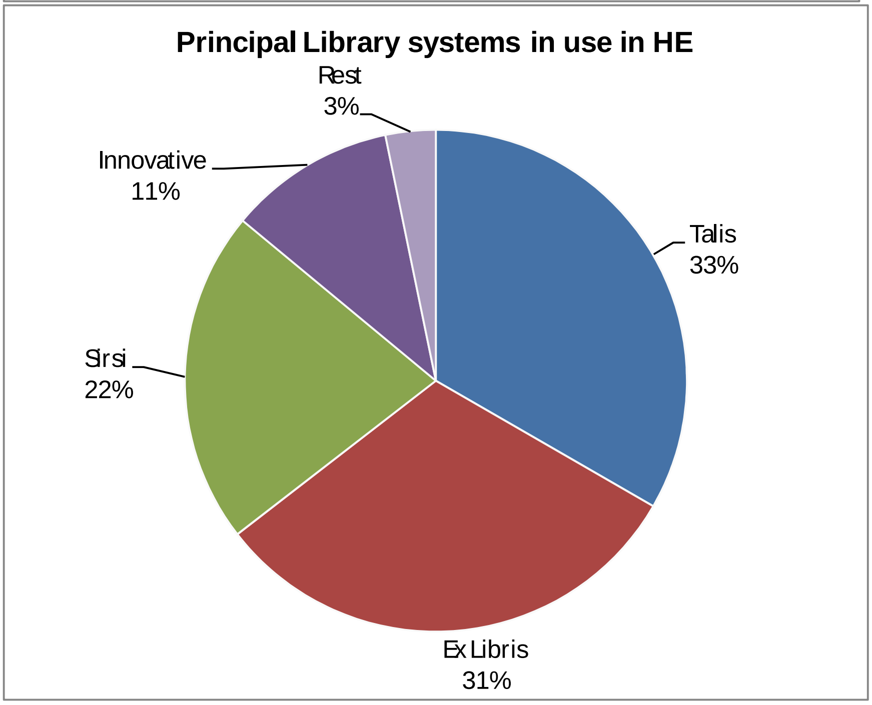




Tribal is dominant in HE but Capita nearly matches it in FE. Overall, the key players are Tribal, Capita, Agresso and SunGard. Capita has a very small presence in HE, albeit in reasonably large universities, and SunGard, from our sample, has but a small presence in FE.

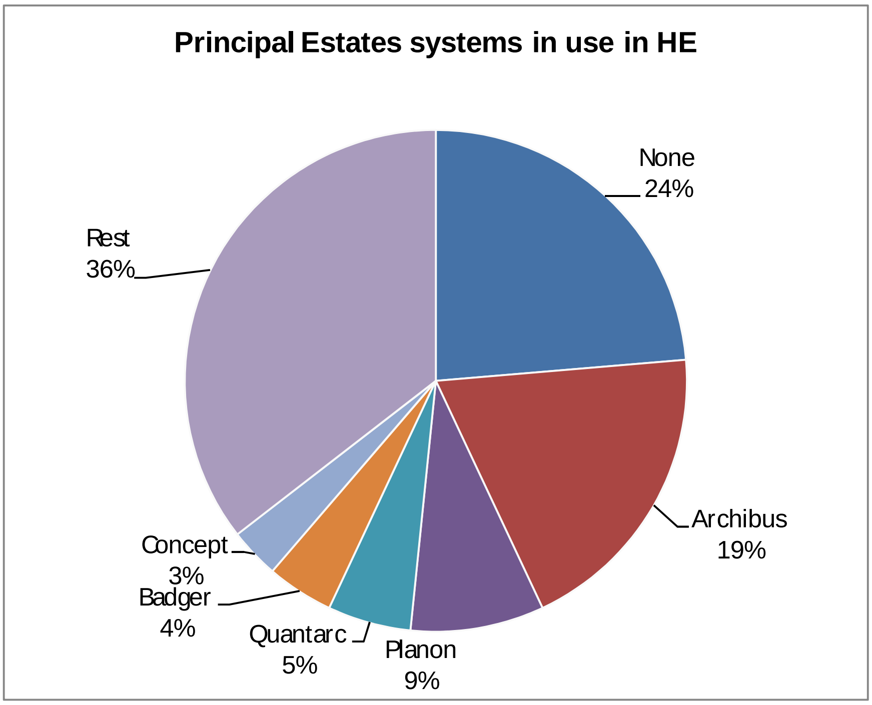
6.3 Library systems





There is little intersection here between the two sectors. Heritage, Sirsi and Autolib have nearly 75% of the library market in FE. In HE, four suppliers, Talis, Ex Libris, Sirsi and Innovative, have all but a tiny part of the market. Sirsi is the one supplier of note in common, but this is likely to be because of its takeover of other suppliers. There are a number of Sirsi systems in use.

6.4 *Estates systems*

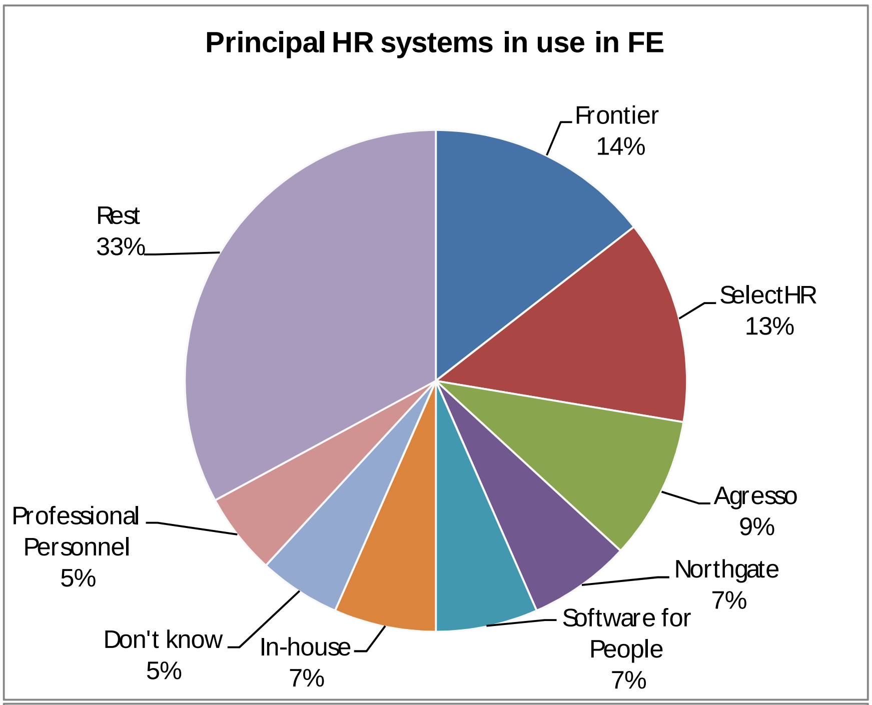


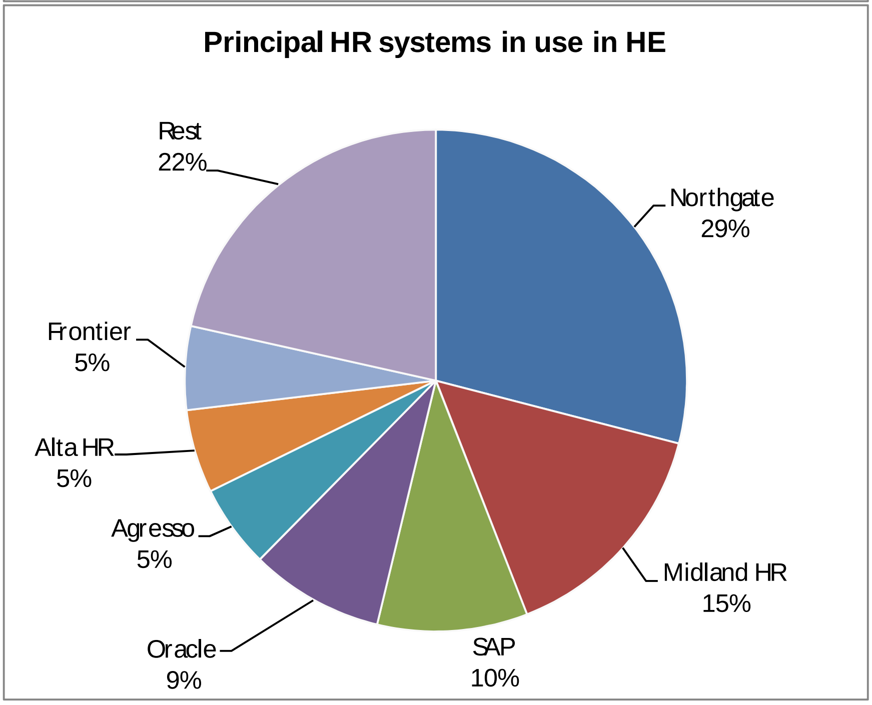
Only Archibus has more than 10% of either the further or the higher education markets.

The results from FE indicated that in nearly 50% of institutions, no systems are in use. Further, nearly a quarter of respondents did not know what system is in use. Another 7% in further education said that an in-house system is in use. Of the systems shown in the chart above to be in use in HE, only Archibus and Quantarc figured at all in the further education responses.

This is a very fragmented market.

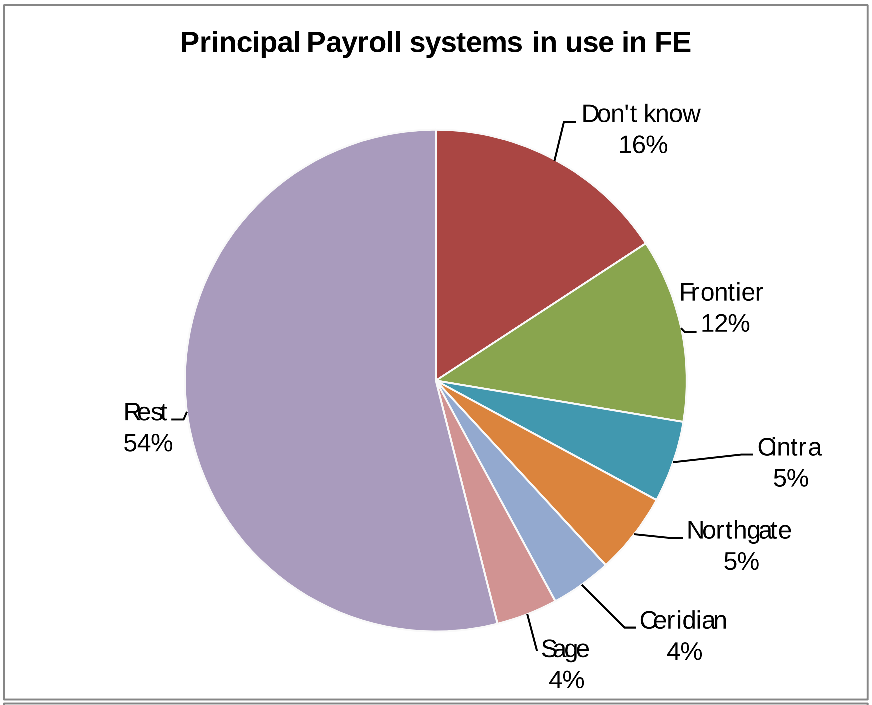
6.5 HR systems

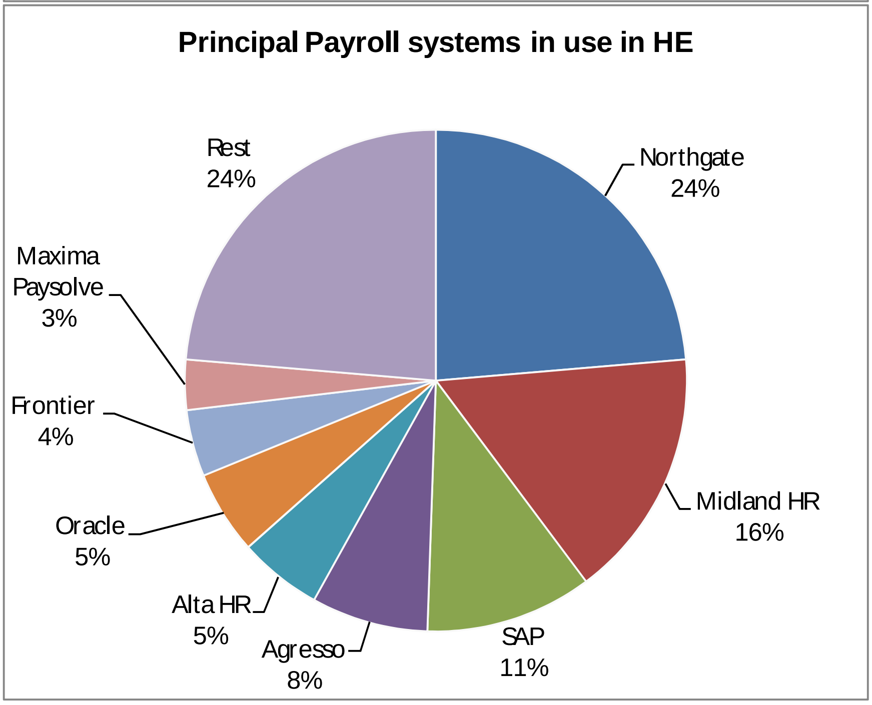




This is a fairly fragmented market in both sectors, but there is remarkably little commonality in the systems used in the two sectors.

6.6 Payroll systems

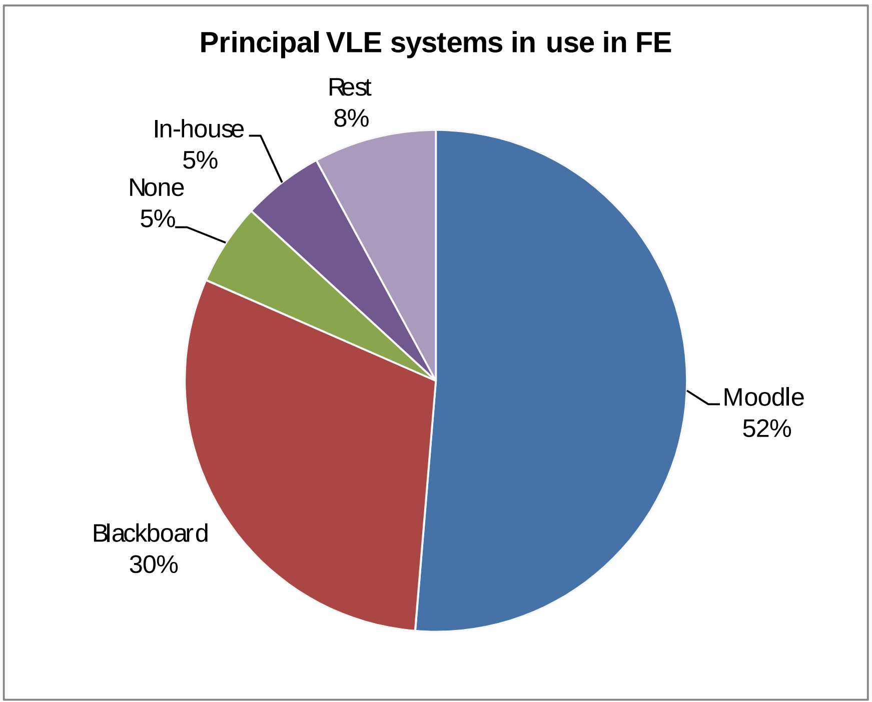


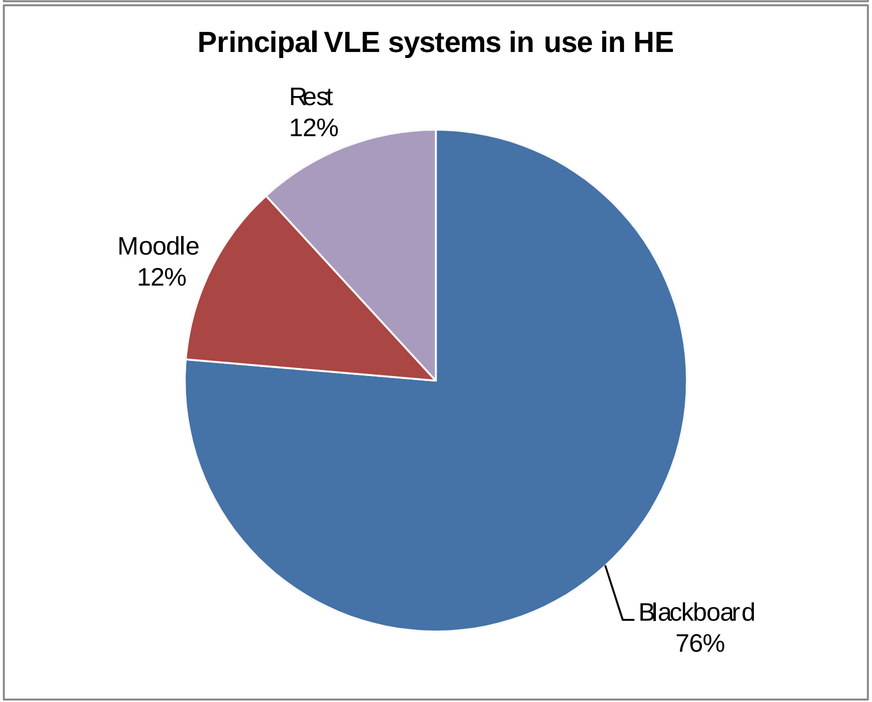


In HE, half the market is dominated by three suppliers. Both Northgate and Midland HR offer a range of ways of using their system, including outsourcing.

In FE, about a third of those shown as “Rest” indicated that Payroll is outsourced, often to a local council.

6.7 VLEs

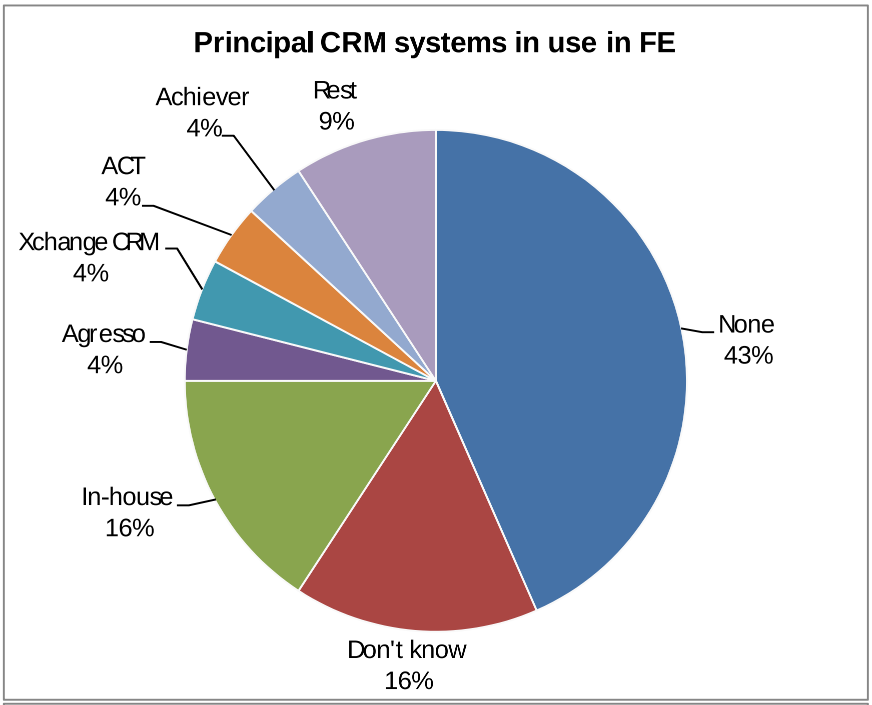


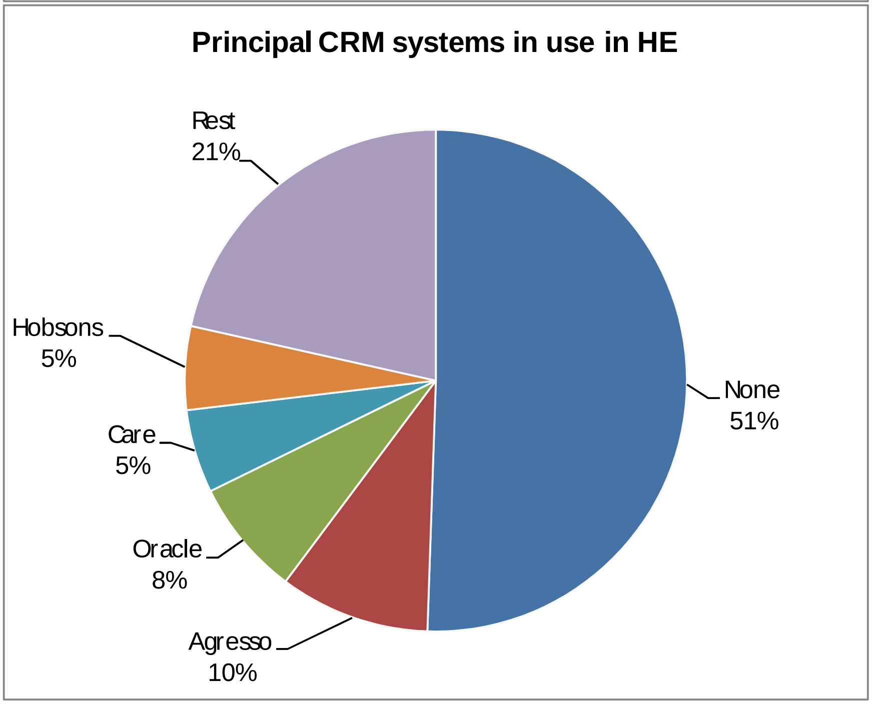


Moodle has just over half the FE market, while Blackboard has three quarters of the HE market. The two dominate the scene. Blackboard sells two systems in widespread use, WebCT and Blackboard.

Moodle is the only open source product with a significant market share in any area covered in the study.

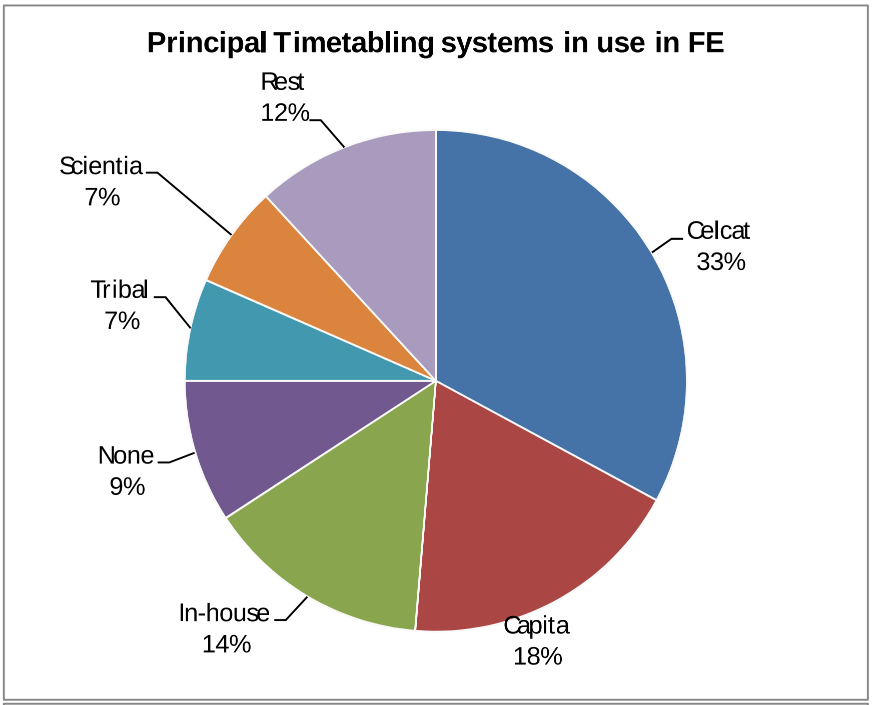
6.8 CRM systems

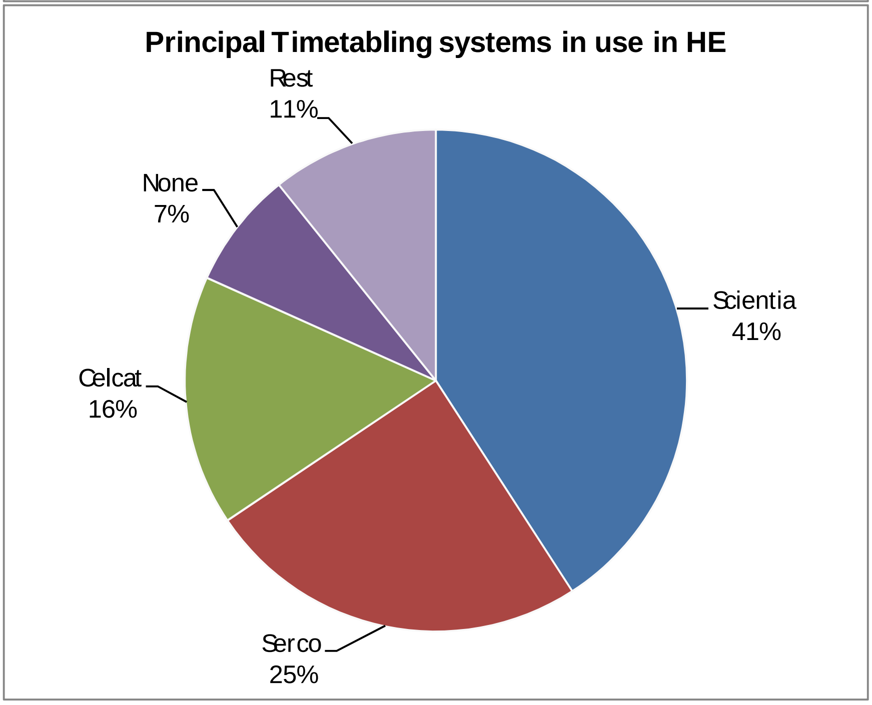




Around half of each sector does not have a corporate CRM. The only supplier appearing in both the charts above is Agresso.

6.9 *Timetabling systems*





Here, the two sectors are similar in that just over 90% of each use timetabling systems. The predominant players in FE are Celcat and Capita. In HE, about 80% of the market is in the hands of Scientia, Serco and Celcat.

7 Analysis

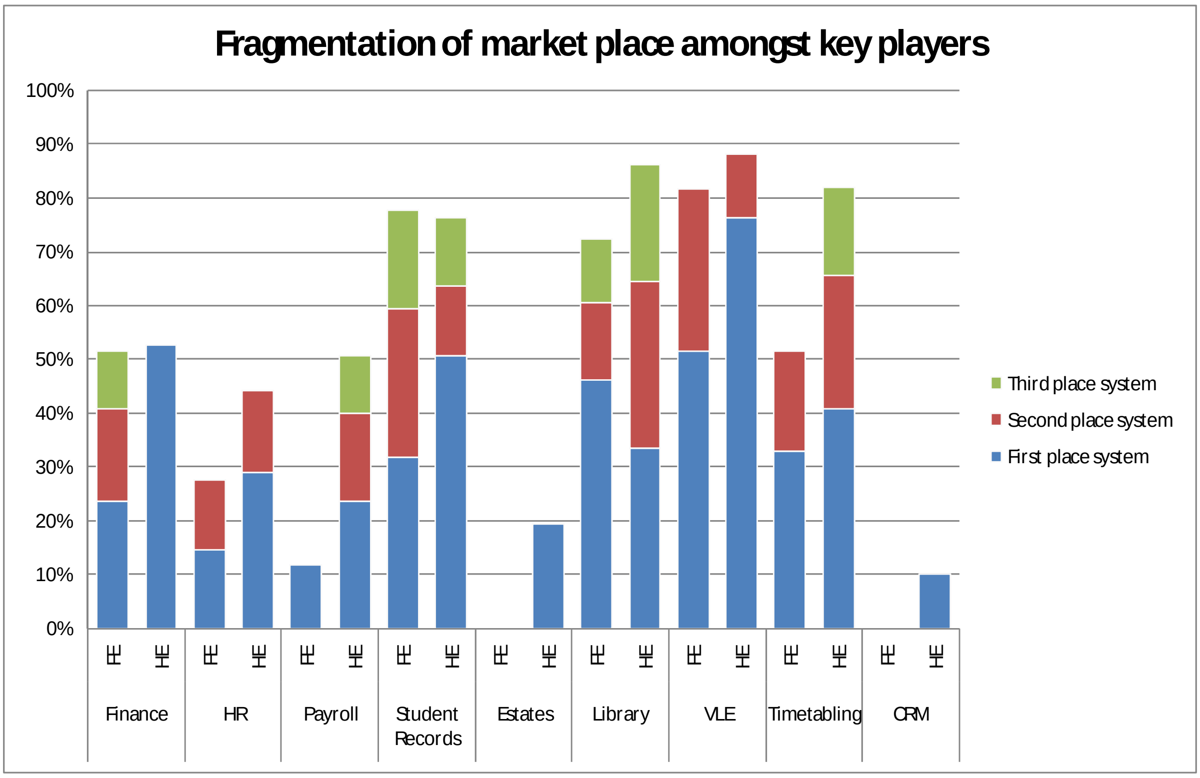
7.1 Key players

Using the figures shown in Section 6, the key suppliers can be identified. The table below shows all the suppliers to each sector for a given function that have at least 10% of that sector market.

Application Area	FE		HE	
Finance	Agresso	24%	Agresso	53%
	Symmetry	17%		
	Corero	11%		
HR	Frontier	14%	Northgate	29%
	SelectHR	13%	Midland HR	15%
Payroll	Frontier	12%	Northgate	24%
			Midland HR	16%
			SAP	11%
Student Records	Tribal	32%	Tribal	51%
	Capita	28%	SunGard	13%
	Agresso	18%	Agresso	13%
Estates			Archibus	19%
Library	Heritage	46%	Talis	33%
	Sirsi	14%	Ex Libris	31%
	Autolib	12%	Sirsi	22%
			Innovative	11%
VLE	Moodle	51%	Blackboard	76%
	Blackboard	30%	Moodle	12%
Timetabling	Celcat	33%	Scientia	41%
	Capita	18%	Serco	25%
			Celcat	16%
CRM			Agresso	10%

7.2 Fragmentation of marketplace

The identification of key players in the market place (see section 7.1) demonstrates that the market in higher education is much less fragmented than that in further education. The chart which follows shows the percent of the market for each functional area in each of the two sectors, further education and higher education, taken up by the first, second and third players in each.



This chart shows that in every area other than for library systems, the predominant system supplier in higher education has a larger market share in that sector than does the predominant system supplier in further education. [For the purpose of this discussion, we are ignoring Estates and CRM systems which are highly fragmented in both sectors]. Furthermore, in higher education the first and second place system suppliers have a larger market share than the first and second place suppliers to further education. Only in the case of student records systems do the first three suppliers to further education have a high market share than the first three suppliers in higher education.

7.3 Combinations of use

7.3.1 2-way combinations

The next stage of analysis is to determine which systems tend to be used in conjunction with others. The most obvious example, discussed in section 7.3.1.11, is the relationship between the supplier of the HR system and the supplier of the payroll system to the same institution.

The MUSIC report on systems integration[1], produced for the JISC in 2007 by the University of Newcastle, measured the levels of integration between pairs of systems. In the report's tables, levels of integration above 50% were picked out. The combinations of systems which we are considering here which were indicated in the MUSIC report as having above 50% level of integration were:

- Finance and HR
- Finance and Estates

[1] http://www.jisc.ac.uk/media/documents/programmes/jos/MUSIC_report.pdf

- Finance and Student Records
- HR and Student Records
- HR and Library
- HR and VLE
- Student Records and Timetabling
- Student Records and Library
- Student Records and VLE

[Note that we have interpreted MUSIC's use of the phrase "student management" to represent Student Records and MUSIC's use of the phrase T&L to represent VLE.]

The sections which follow analyse the common systems in use in each of the pairs identified as having above 50% integration level in the MUSIC report.

The MUSIC report is about the extent of systems integration as it is at present. One of the areas where we would expect to see increasing interaction, given the increasing involvement of libraries in the delivery of digital materials, is between the library system and VLE. We have therefore also added an analysis of this combination of systems.

7.3.1.1 Finance and HR

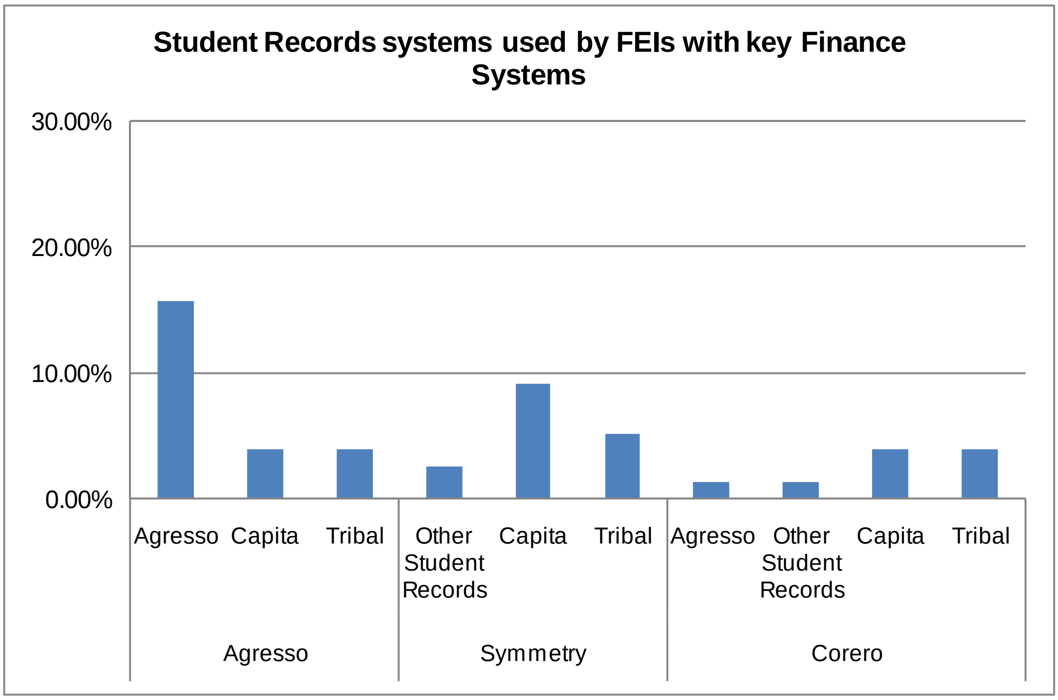
In higher education, the only combinations of key suppliers of Finance and HR which achieve above a 10% penetration level Agresso and Midland HR and Agresso and Northgate: each of these has a 12% penetration level. Startlingly, in further education, no combination of key suppliers of finance and HR achieves higher than a 4% penetration level.

7.3.1.2 Finance and Estates

Given the highly fragmented nature of the Estates' system market in further education, there were obviously no key combinations of Finance and Estates systems with significant penetration levels. In higher education, the pairing of Agresso and Archibus achieves a penetration level of 12%.

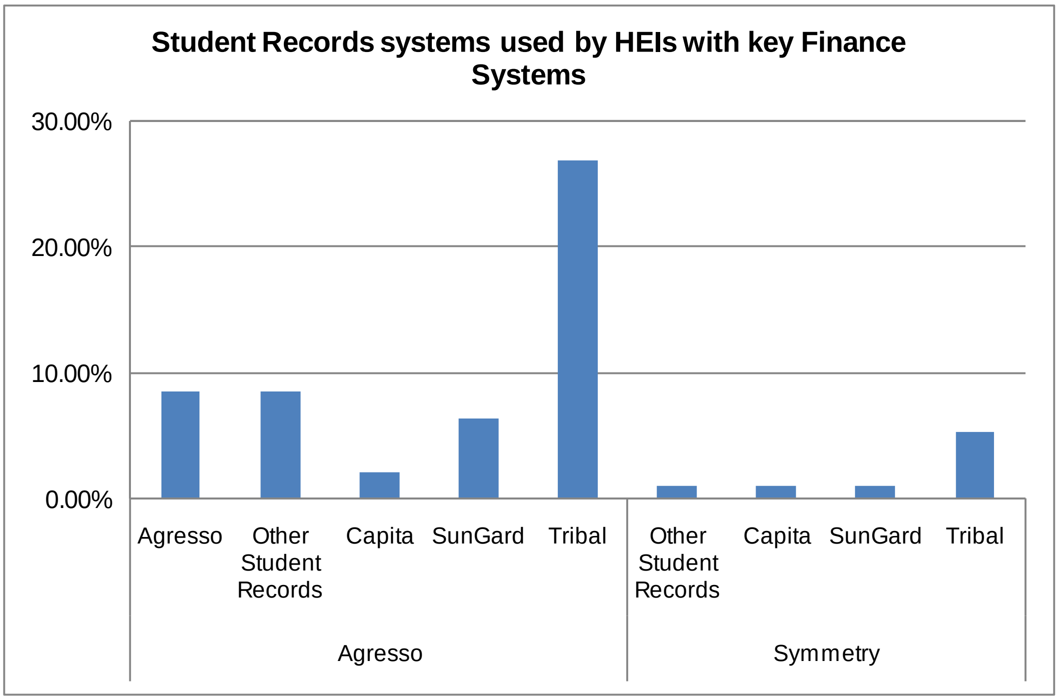
7.3.1.3 Finance and student records

The two most substantial administrative systems in use are the Finance and Student Records systems. The following chart shows which student record systems are in use by those further education institutions using principal finance systems, Agresso, Symmetry and Corero.



The chart demonstrates that only one combination of finance system and student record system, that of Agresso and Agresso, is present in more than 10% of institutions. Its nearest competitor is that of a Symmetry finance system with a Capita student records system.

A similar draft for higher education institutions shows that the combination of an Agresso Financial system with the Tribal Student record system is present in about a quarter of institutions. No other combination gets above about 8%.



7.3.1.4 HR and Student Records

In further education, the combination of the Frontier HR system and the Tribal Student records system achieves a penetration of just under 10%. In higher education, the only combination of systems which achieves a penetration level of higher than 10% is that of the Northgate HR system and the Tribal Student records system, achieving a level of 15%.

7.3.1.5 HR and Library

In FE, no combination exceeded the 10% penetration level. In HE, the following combinations were over 10%.

Sector	HR system	Library system	Market share
HE	Northgate	Talis	11%
HE	Northgate	Ex Libris	11%

7.3.1.6 HR and VLE

In FE, none of the key HR system suppliers achieve more than a 7% penetration in combination with either of the two key VLE suppliers, Blackboard and Moodle. In HE, Northgate and Blackboard are in place together in 22% of institutions.

7.3.1.7 Student Records and Timetabling

The following table shows those combinations, for each of the further and higher education sectors, where a combination of a key student record system supplier and a key timetabling supplier have a penetration higher than 10% of the market.

Sector	Student records system	Timetabling system	Market share
FE	Capita	Capita	17%
FE	Agresso	Celcat	13%
HE	Tribal	Scientia	22%
HE	Tribal	Serco	12%

7.3.1.8 Student Records and Library

The following combinations pass the 10% penetration level.

Sector	Student records system	Library system	Market share
FE	Capita	Heritage	16%
FE	Tribal	Heritage	12%
HE	Tribal	Ex Libris	17%
HE	Tribal	Sirsi	14%
HE	Tribal	Talis	12%

7.3.1.9 Student Records and VLE

The dominance in HE of Blackboard and in FE of Moodle leads to a there being a number of combinations which achieve a 10% penetration level. These are shown in the table below.

Sector	Student records system	VLE	Market share
FE	Tribal	Moodle	16%
FE	Capita	Moodle	16%
FE	Agresso	Blackboard	12%
HE	Tribal	Blackboard	40%
HE	Agresso	Blackboard	12%
HE	SunGard	Blackboard	11%

7.3.1.10 Library and VLE

This combination, Library and VLE, is not in the MUSIC list of highly integrated systems. However, we have included it because of the centrality to the academic process of this pair of systems.

This are is remarkable for having three combinations with more than 20% penetration in one or other sector market. This is probably because both areas in each sector are dominated by a few suppliers.

Sector	Student records system	VLE	Market share
FE	Heritage	Moodle	26%
FE	Heritage	Blackboard	11%
HE	Talis	Blackboard	28%
HE	Ex Libris	Blackboard	22%
HE	Sirsi	Blackboard	16%

7.3.1.11 HR and payroll

The following two tables show the key combinations of products in the two areas. The tables demonstrate the extent to which the principal systems (see section 7.1) in use for HR tend to be combined with the systems from the same suppliers for payroll.

HR System in FE		
	Payroll system	**% of market**
Frontier		
	Frontier	9%
	Don't know	1%
	Remainder	4%
	Total	14%
SelectHR		
	Don't know	1%
	Remainder	14%
	Total	15%

HR System in HE		
	Payroll system	**% of market**
Northgate		
	Northgate	22%
	Remainder	7%
	Total	29%
Midland HR		
	Midland HR	14%
	Remainder	1%
	Total	15%

Other than for SelectHR, for the most part the principal HR systems are provided by the same supplier as the payroll system. This association is not surprising. The payroll system only interacts with a very few end-users and its principal interoperability linkage is with the HR system.

7.3.1.12 Summary

The two-way combinations in the analysis above which achieve above 20% market share in either FE or HE are shown here

Sector	First Functional Area		Second Functional Area		Market share of sector
	System	Supplier	System	Supplier	
FE	Library	Heritage	VLE	Moodle	26%
HE	Library	Talis	VLE	Blackboard	28%
HE	Library	Ex Libris	VLE	Blackboard	22%
HE	HR	Northgate	Payroll	Northgate	22%
HE	Finance	Agresso	Student Records	Tribal	27%
HE	HR	Northgate	VLE	Blackboard	22%
HE	Student Records	Tribal	Timetabling	Scientia	22%
HE	Student Records	Tribal	VLE	Blackboard	40%
HE	HR	Northgate	Payroll	Northgate	22%

8 Issues arising

8.1 Market Fragmentation

The most obvious conclusion to be drawn from the data provided to us is that the systems market for further and higher education is very fragmented. There are a large number of different suppliers across the range of systems considered. In some functional areas, there are a substantial number of separate suppliers. There is also remarkably little overlap between the two sectors.

Where there are dominant suppliers, achieving that status has often been not only by developing systems but also by buying other suppliers. This means that the data that we have provided does not always reflect the variety of actual software in use. We have focused on the suppliers because, in the context of developing shared services, these are what matter.

8.2 Differences between Functional Areas

The nine functional areas we consider in this report show a variety of patterns of use and market share. CRM is the area which shows the least maturity. More than 40% of FEIs responding indicated that they made no use of a CRM and about half of HEIs responded in the same way. Furthermore, 16% of FE respondents did not know the answer to the question about which CRM their institution uses. This could indicate no use of a CRM. Hardly surprisingly, the remaining half of the two markets had a wide range of suppliers.

The other area showing a characteristic either of complete fragmentation or of being an outsider as a corporate system is the Estates area. Only one product had more than a 10% share of either the FE or the HE market. A quarter of those responding from higher education said that no Estates system is in use at their institution. The results do imply that Estates systems are handled differently within institutions than are other corporate systems.

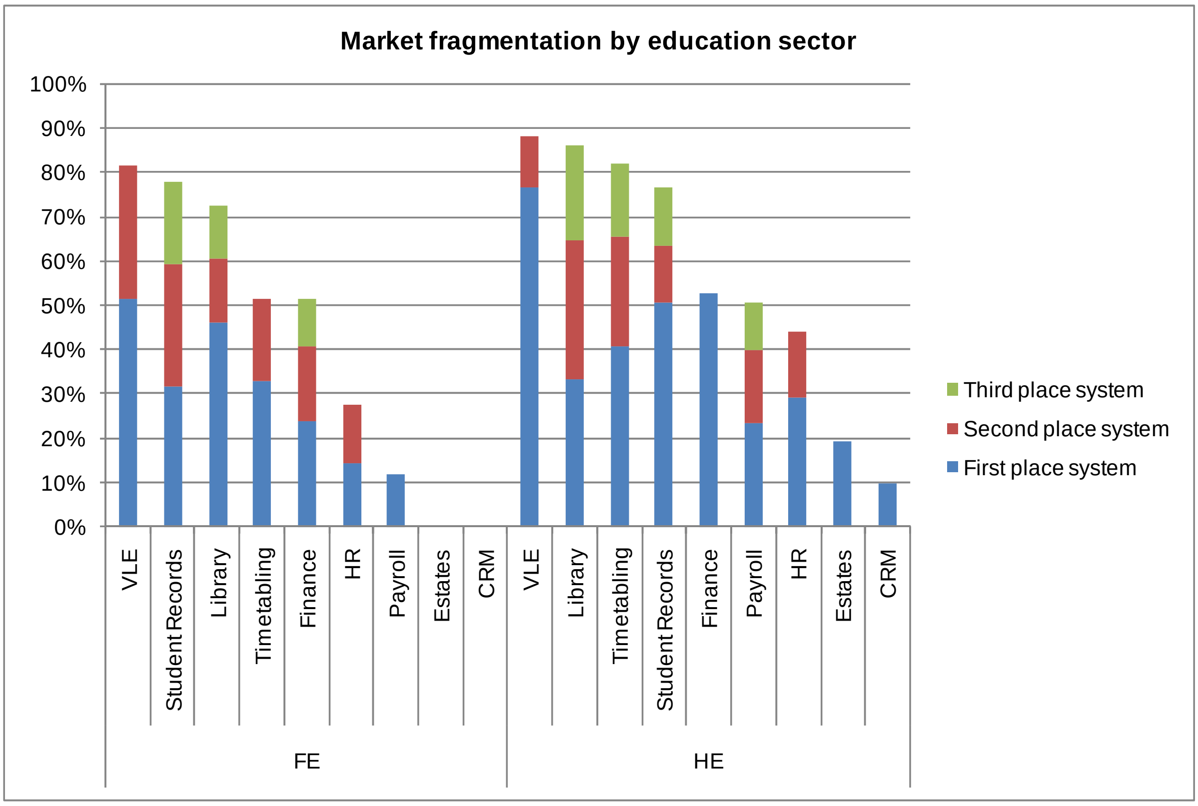
The area of VLEs, on the other hand, shows complete dominance of the market by Moodle and Blackboard. In further education, Moodle has just over half the market with Blackboard having a further 30%. In higher education, Blackboard has about three quarters of the market and Moodle just over 10% of the remainder. This is the one area where an open source product, Moodle, has any significant market share.

HR and Payroll have a clear relationship, demonstrated in section 7.3.1.11, of a significant correlation between the supplier of the HR system and the supplier of the payroll system, the two often being the same. This is presumably due to Payroll having a long history as an automated administrative system. There are many suppliers in this area and the fragmentation of the two sector markets reflects this.

Given the dominance of the principal three or four suppliers of library systems to each of the further and higher education sectors, it is surprising that there is so little overlap between the two sectors. In HE, four systems take all but 3% of the market. In FE, three systems account for just under three quarters of the market: only one of these three systems is one of the top four in HE.

There is a remarkable similarity in the market shares shown for Finance, Student Records and Timetabling systems. In each case, the higher education market has one player which is significantly larger than any other and then has a relatively low number of small players. For example, Agresso has over half the higher education market in Finance as has Tribal in Student Records. In both of these functional areas, the same suppliers are the largest in the further education market. And in both these markets, there are more small players in further education than in higher education. In Timetabling, the largest player in higher education has just over 40% of the market, whereas the largest player in further education has about a third of the market: it is noteworthy that the largest player, Scientia, in higher education has only a small part of the further education market. Timetabling also reflects the pattern in Finance and Student Records in that there are a smaller number of large players in higher education than in further education. Where Timetabling differs from Finance and Student Records is that a significant number of responses in both sectors indicated that no Timetabling system is in use.

The graph demonstrating the fragmentation of the market place among key players, presented in section 7.2, is shown here with a regrouping and reordering of the data.



The columns are grouped by sector and ordered by the total height of the columns. Library management, Student records, Timetabling and VLE are the highest columns for each sector and may be judged therefore to be the least fragmented markets. These are the systems specialist to education and one might expect a small number of niche suppliers to develop and to take the largest part of the market.

The other five systems, Finance, HR, Payroll, Estates and CRM are in use across the commercial world. There is room in that market place for a far larger number of suppliers and this is reflected in the fragmentation of the markets for those systems in education.

This discussion also offers some explanation for the differences in suppliers between HE and FE for library systems. HE libraries tend to be much larger than FE ones and are thus in a market place shared with public libraries. The FE library suppliers are therefore in the smaller market place.

8.3 Differences between FE and HE

Overall, there is a much wider variation in the systems in use in further education than in higher education. In several areas within higher education, there are market leaders which have substantial market shares. In further education, on the other hand, there are few areas where a small number of products dominate.

We conclude that this is for two principal reasons. The first is that there are far more further education institutions than there are higher education institutions: this inevitably leads to a greater variation of software in use, although it does not lead inevitably to the largest players having a smaller part of the market. The second reason, we think, is that interactions between practitioners in further education institutions are more regional that the often national interactions between practitioners in higher education institutions.