

**SHEFFIELD HALLAM UNIVERSITY**

**FACULTY OF ACES**

**THE EFFECTIVENESS AND EFFICIENCIES OF BUSINESS PROCESSES.**

**HESA: A CASE STUDY**

**by**

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**This dissertation does NOT contain confidential material and thus can be made available to staff and students via the library.**

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## Abstract

Cowan (1985, p235) identified a number of advantages of analysing effectiveness and efficiencies in Higher Education, three of which are pertinent to this research. These are: highlighting 'issues which require to be resolved', these can be 'defined and measure in a meaningful form' and place a 'greater emphasis than hitherto is placed on efficiency'.

This piece of research aims to look at the issues facing the work of the annual external data submission to the Higher Education Statistics Agency, why these exist, and what can be done to address and aid these issues, or to prevent these issues from occurring in the first place.

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## Introduction of the Topic

The Higher Education Statistics Agency (HESA) is the official department for the collection and dissemination of quantitative student data for the higher education (HE) sector in the UK. Each year all publicly funded HE institutions (HEIs) must submit a credible file of student data as per HESA's requirements. This XML file contains all relevant data of students including their highest qualification on entry, records of enrolment, module results, parent's socio-economic status, placement information and graduation information. Therefore an average sized institution with around 15000 students would expect to submit a file containing up to 15 million pieces of data. This is a regulatory process and can impact on the finances a University receives and can also have financial implications, incurring fines where targets are not met.

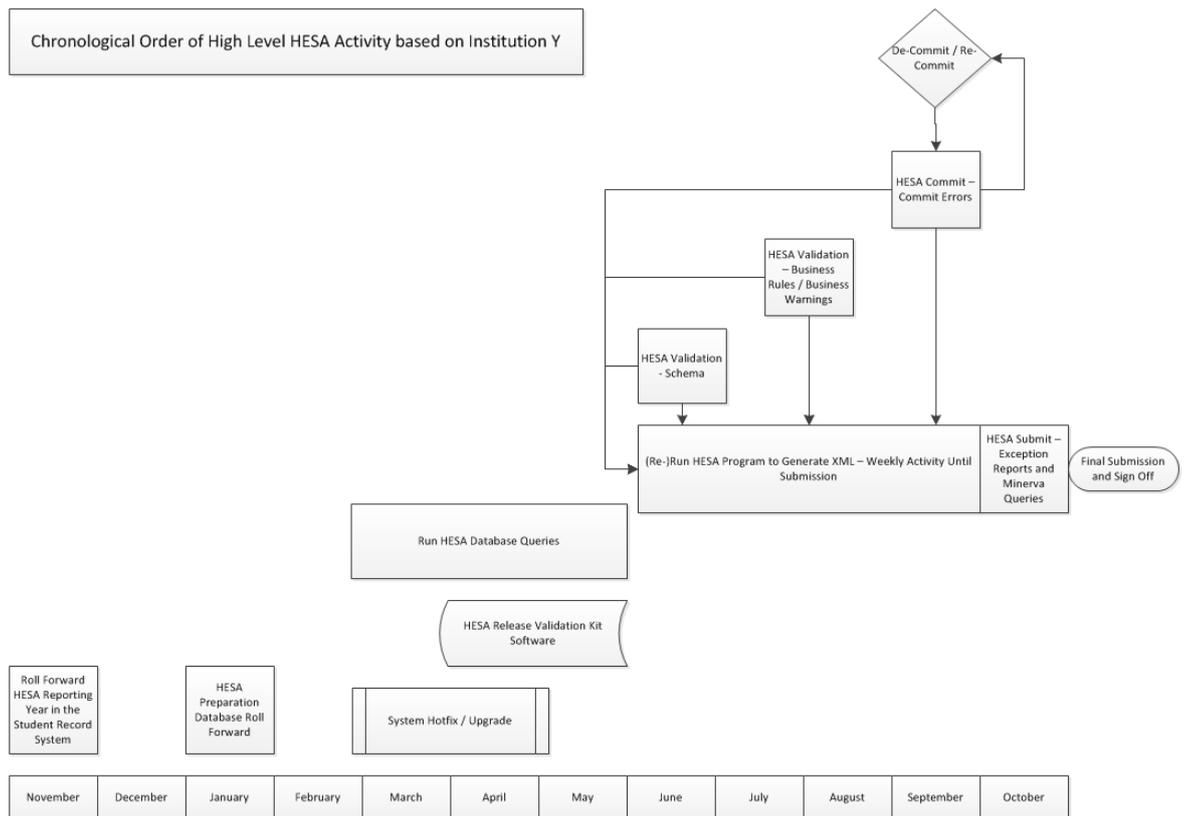
HEIs vary on the way this work is undertaken; the organisational structure of those who have input or responsibilities and the time taken for one HESA cycle to start and finish. Staffing responsibilities and organisational structures range from dedicated centralised teams to just a handful of staff that devolve the work as necessary - or a mixture of those. For example the University of [REDACTED] has a data management unit responsible for all external reporting, not just HESA. In contrast [REDACTED] University has a partially devolved system where the responsibility of external reporting falls to the individual schools/faculties whilst being coordinated by their Directorate of Planning and Academic Administration. When this work is coordinated by a central team, some of the work will still need to be devolved as it will be unfeasible for a central team to have access to all necessary data/information. At [REDACTED] University, the Student Systems and Records Team is responsible for the vast majority of the work and coordination of the return. Staff responsibilities within that team will cover the HESA errors where possible, but there comes a point when the knowledge of staff within the faculty is needed as they are the ones who have access to a more granular level of student information. It has a vast range of activities and tasks ranging from basic data cleansing to applying upgrades to the institution's student record system to allow for annual changes.

## Timeline of the HESA Process

The start of any given HEI's work on HESA can vary. However for HESA purposes, the validation kit (the software provided by HESA to check the data of a submitted XML file) is released during the April of the current academic year of the current HESA cycle. At the highest and simplest level, an institution would generate the XML file and run it through the validation kit. This would then produce an output of any errors, the first level of which are called Schema Errors (SE). These are low level errors such as a student's postcode is missing, but must be cleared and corrected before the file will progress onto the business rule stage. Once there are no SEs remaining the clean file will once again be passed through the validation kit, and this time (assuming there is erroneous data) it will output various Business Rule (BR) errors along with

Business Warning (BW) errors. An example BR error would be that a student has a postcode on their record, but it is in an invalid format. A BW error could be that a student's date of birth falls below the threshold that a student is expected to be at least 18 years of age on entry. At this stage it is vital that the BR errors are cleared before a test commit of the file can take place. The BW's do not need to be cleared, but will impact on the test commit later. Once the BR's have been cleared a test commit can take place. This will then output the commit errors (CE). An example of a CE could be that a student has a postcode, it is in a valid format, but the postcode is an English postcode when the student has stated that their country of domicile is Wales. The test commit happens so the file can be cleansed further before an actual commit happens. This is because there is a lot of data analysis that takes place by HESA on a committed file. The deadline for the first commit is around the end of September. Once a file has been fully committed, there are a number of reports and files that are generated along with Minerva queries (MQ). These are the final stage of the HESA process and for the highest level of error where analysts from HESA pose questions to institutions based on the data submitted and can be complex queries with multiple parts. They tend not to be rectified via a correction to data, and normally need a written explanation. An example of an MQ would be a drop in the percentage of student numbers on a certain type of course, to which HESA need an explanation. The deadline for the initial commit, passed (as determined by HESA), is by the third week of September, with the deadline for response to all Minerva queries and a final commit, passed and signed off, by the end of November.

However, that is a very linear view of how the process could go. Due to the number of errors involved, there are multiple submissions and resubmissions of the XML file through the validation kit at all levels of errors. Student data is not static and this causes further issues as one week's errors maybe cleared, but on the next run, there may be further student records that were not in the previous file but are now included, that produce further errors. Due to the interrelated nature of the data, it is very common for one error to be corrected, but for this correction to create further errors for that record. It is also important to note that this work can only begin once HESA has released the validation kit for that reporting year. The majority of institutions do pre-emptive data quality checking and cleansing between the end of one HESA period and the start of the next before the release of the validation kit. However, the time and resource for this varies from institution to institution.



## Main Issues

The University of [REDACTED] at the Student Records Officers Conference 2012 gave a presentation about HESA. The question asked at the start of the presentation was 'Can HESA be stress free?' The 2<sup>nd</sup> slide simply said 'No. But...'

### Staff Turnover

The issue of staff turnover will depend on the hierarchy and structure of the institution and how staff members are used for the HESA error and data correction queries. Staff members on lower grades are more likely to move on, be promoted or get seconded out of their role after quickly developing transferrable skills. Therefore a staff member may develop HESA knowledge and experience over a HESA cycle, but then may not be in the same role the following year and therefore that knowledge and experience is lost, leading to the training of a new member of staff. Larger teams are more able to absorb the work at this level, even with the barriers and problems it can bring. Where it is more of an impact is at a senior level when expert knowledge and leadership on the HESA process is lost.

### No/Low Level of Dedicated HESA Staff

Lack of dedicated staff relates to the above issue of staff turnover and is more a concern for those institutions that have a greater form of devolved areas of responsibility. Where roles that are not HESA related, but are called upon to

correct data for HESA at any given time, means they are not involved with it regularly. Therefore they do not have as deep an understanding of the importance or the interconnected nature of the data and the impact this can have on other teams, processes and errors. Even those with devolved areas of responsibilities but with centralised coordination of the HESA return, the staff who may solely work on HESA become experts in the higher level errors, or in specific areas. This means the low level errors need to be relearned again and again by new staff or existing staff who may only be asked to make corrections of this nature once a year.

### **Year on Year Changes**

As the data landscape is an ever evolving entity, no one HESA return will include the same data year on year. The most noticeable example of this in recent times is the change in fee regimes in 2012/13 brought about by the coalition government. Aside from the huge impact this had on institutions in terms of recruitment and business processes, HESA also now required institutions to report the net and gross fee of a student. The main crux of this is that it is hard to produce a standardised process when processes have to through regular change due to external influences. HESA will, on occasion relinquish the need for some data that is no longer relevant. HESA will also bring in something new one year that will be classed as optional for an institution to report but the pattern seems that the following year that optional piece of data will become compulsory. These changes not only impact on the team implementing the change, but also those who will be using the new process that captures the newly required data.

### **Lack of Documentation**

Lack of adequate documentation is problematic in itself, but the issues this causes is compounded by the above issues. When experiencing a high rate of staff turnover, lack of documentation can make training longer than necessary. Any time an institution tries to get a hold of their documentation provision, year on year changes by HESA would make this very challenging to maintain and keep current. The other issue here is that of responsibility - should it be the institution, or should it be HESA who provides the documentation. The HESA website is updated with changes and will have dedicated pages to HESA returns by academic year. The problem with these pages is that the information is more associated with what is wrong and not how to fix it. Part of the reason however, that HESA could not adequately provide 'how to' documentation is to do with the fact that not all institutions use the same student record system, and all institutions differ in terms of the approaches they take to coding frameworks (which in turn differ from the coding frameworks of many external bodies, not just HESA - see below).

### **Coding Frameworks**

Regardless of the student record system that an institution adopts, it will rely on many forms of codes, from courses to modules, student codes to enrolment

statuses. The list will be vast. Student record systems are also awash with acronyms. If we take a student's mode of attendance (MOA) as an example, the three main MOAs are Full Time, Part Time and Sandwich. What one might see as the obvious acronyms for these may differ to what another person would think the most appropriate. The smallest of differences, such as FT, PT, SW vs F, P, S, will have implications for external bodies to not be able to provide detailed and consistent guidance. Across the 109 institutions in the UK, this may be one code where the similarities may be greater. However, an institution and its many nuances may need further codes. One institution used in this research for example, has 28 different MOAs. This makes it impossible for HESA to provide full process guidelines as they will not be able to know, capture and record all the variations of coding structures across the various student record systems that are used across the sector.

To add to the complexity, it's not just the 109 institutions differing and various coding frameworks that have to be taken into account, there are a number of external bodies; Universities and Colleges Admissions Service (UCAS), the Higher Education Funding Council for England (HEFCE), Student Loans Company (SLC) and of course, HESA, to name but a few. As an example, it helps greatly that UCAS' code for Full Time is FT, but only to those institutions that use the same code. Common sense may make you question why would it be anything else? Why don't all institutions and external bodies use FT to represent a Full Time MOA? The tip of the complexity is here - HESA, for 2013/14 has 24 different codes, all numerical. Any student marked at institutions as 'FT' needs to ultimately end up in the HESA return as 01. This is one very small example. Further complexity is added when the information one external body has, differs to what another external body has. Both are using different codes to each other that also differ to what is being used by the institution.

### **Lack of System Controls Allowing Erroneous Data**

Following on from the above issue, this too is not HESA specific and can impact upon a number of student record processes but it is in the power of the institution to control. Continuing with the area of postcode validation, there are checks that can be done within a student record system that can force a student to enter something. This kind of check can be developed further to make sure that the postcode entered is in a valid format. However it is not always in the power of the institution, as the majority of FT, Undergraduate (UG) students would apply through UCAS. Therefore it would be up to UCAS to enforce this kind of data validation.

### **Migration of Data and Data Responsibility**

Another issue surrounding the data within the system is ownership. In a centralised model it would only usually be the data quality that would be owned by a central team. Faculties/Schools would normally be responsible for all aspects of the student record from Enrolment to Graduation. However there are

elements of responsibilities changing from one person/team to another. One recurring issue at one of the institutions interviewed is around qualification records. Sometimes these are left incomplete during the Admissions process, and it is not till well into the HESA cycle that this issue is picked up (and directly relates to the point above). However by this time, the student(s) will be enrolled and Admissions no longer 'own' that record nor have access to the information to rectify it. Therefore it becomes a faculty responsibility to correct an error that was not of their making. This becomes a political issue that needs managing diplomatically and should to be addressed by the central team that is doing the coordinating. This is supported with Redman (1998, p82) stating that 'poor data contributes to difficult, in some cases irresolvable, political situations'.

### **Data Not Correct at Source**

This is one of the issues that cannot be attributed to the way HESA works. This is a business process and organisational issue. If we take a basic structure of an institution with an Admissions Team, a Student Records/HESA Team, and a Faculty; if the Admissions Team does not capture and correctly input the data at point of a student's application, by the time HESA errors are being investigated, the student's record has migrated from the Admissions Team to the Faculty. If then, the Student Records Team cannot correct the data; they have to approach the Faculty to do the correction. This can be politically and culturally frowned upon as the Faculty become responsible for correcting erroneous or incomplete data for which they were not responsible for collecting as discussed in the above issue.

### **Complex and Inter-related Data Structures**

As with most systems, a person's skill, knowledge and experience can easily develop over time. The problem here is for those staff members that spend a short amount of time on HESA error correction, where HESA is not their main role or responsibility. It takes at least one full cycle to only begin to understand HESA's terminology and coding and how that relates to the coding of the institution. For example, the following is a BR error that an institution receives from the validation kit:

Where exists Student.TTPCODE must not equal EntryProfile.POSTCODE where Student.TTACCOM = 1 or 9 and Course.COURSEAIM begins with H, I, J, C, P, Q, R, S or X or is M22 or M26.
---

This translates to:

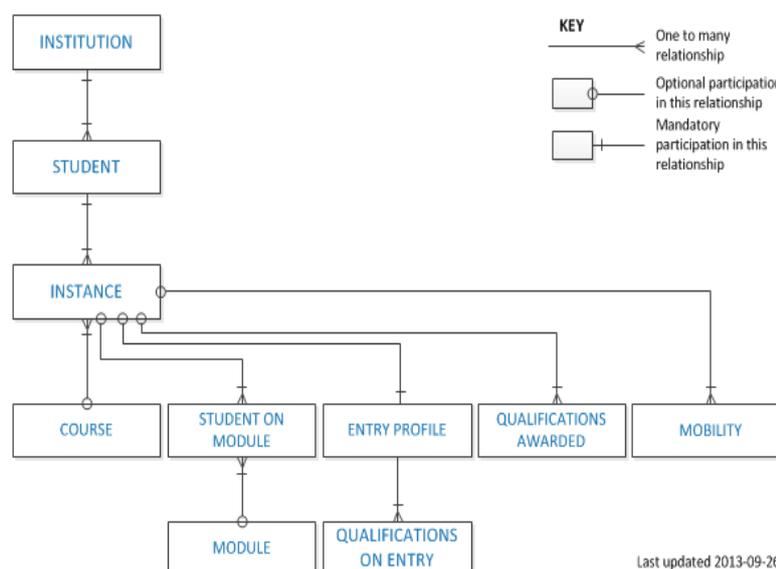
The Student's Term-Time Postcode must not be the same as the Student's Home Postcode where the Student's Term-Time accommodation has been coded as University Accommodation or Private Halls and a Student's Course Aim is of Undergraduate Degree Level or Lower.
--

At Institution Y, the accommodation codes map directly to the HESA codes. The course aim codes however do not. There are also multiple database tables within the student record system that a staff member would need to check to get

a full understanding of what this error meant and how to resolve it. In its simplest form what it is saying is that a student is not allowed to class University accommodation as their home/permanent address. What tends to happen is a staff member is given a set of errors to look at and they have to develop an understanding of this jargon before becoming effective at processing it.

Further to this, an institutions student record system and its interrelated data held therein will differ to HESA's interrelated data structure. If you see below, this is HESA's structure:

HESA Student record entity relationship diagram



Taken from the HESA Website:  
[http://www.hesa.ac.uk/component/option,com\\_studrec/task,show\\_file/Itemid,233/mnl,13051/href,datamodel.html/](http://www.hesa.ac.uk/component/option,com_studrec/task,show_file/Itemid,233/mnl,13051/href,datamodel.html/)

### Multi-Layered, Hierarchical Process / Devolved vs. Centralised Models

This was explained in the timeline of the HESA process section in terms of what happens. However it is important to reflect upon the impact these models have on the work being carried out. Referring back to the example about postcodes, there does not seem to be any logic to the delay caused by access to the various levels of error between a null postcode, an invalid postcode format or an incorrect postcode. As these are quite low level data errors, and quickly fixed, it would make more sense for all errors of this type to be available immediately. This is a common issue when there is a mix of centralised and devolved processes. It is worth noting at this point that a fully centralised model would not be feasible in larger institutions as there will always be data that would only be known and/or accessible to Faculty staff. Similar to this a fully devolved model is also not possible as there would always need to be a central team or figure responsible for the coordination of the final file.

## **(Un)Timeliness of System Upgrades and HESA Validation Kit Release Date**

System upgrades will vary between suppliers of student record and curriculum data management systems and directly links to the release of the HESA validation Kit. Both are needed to progress. It is not just a case of whichever comes later is the one impacting on the time to manage this work, but it's the time of the year it is released or implemented by the institution. For example, the HESA validation kit is due for release in April, when this is released, data would not pass through it as year on year changes brought in which require new fields of data may not be in an institution's system until an upgrade/hotfix is released and implemented. It would be of great benefit to institutions if these were released and implemented much earlier in the year.

## **More Scrutiny for Less Money?**

There has been a general feeling amongst HE staff who deal with HESA and HEFCE that as the availability of funding that is distributed to HEIs has reduced due to the change in the fees regime, what money is left is subject to more scrutiny than ever before. Previously students were just reported at the course level, however, in 2011/12, as a prelude to the fees change, students had to start to be reported to HESA right down to the module level. This relates to year on year changes. From a process point of view, the monetary implication of this is not relevant. What is relevant is the fact it is now commonplace for more data that is accurate and correct to be requested each year. What may come after this are multiple HESA submissions within one reporting period, a prospect which the majority of HEIs would not want to face, but is currently rumoured.

## **Limited Continuous Service Improvement**

Due to the annual changes and the increased scrutiny, HEIs are continually firefighting to re-develop processes to capture the information that HESA requires. Due to these changes continuous service improvement year on year is often limited to improving the process to accommodate these changes, not to improve upon processes that capture data that was always needed. If the dataset stayed the same for a number of years then the level of continuous service improvement would greatly increase.

## **Difficulties in Measuring Effectiveness, Efficiencies and Success**

A business process can be very efficient, but not very effective. Similarly it can be very effective but not very efficient. The key to improving business processes is striking the right balance between the two. From a Senior Management perspective, an institution meeting the HESA deadline and submitting a credible file equates to success. In the end of year HESA Institution Feedback Report (HIFR), an institution can be show as performing above average against sector averages. What both of these do not show, and due to the sense of achievement and success that a completed HESA return

provides, is that the journey to get to that point is often fraught with problems, inefficiencies, unforeseen circumstances and stress.

### **Size of the Institution**

The size of the institution in terms of student numbers and the provision in terms of courses will greatly affect the complexity of data returned to HESA. Institutions that are reportable to HESA vary in size from various Colleges and Research Institutes having below 1000 students, to the larger institutions who will have closer to 40000 students. It is the various pathways of a student's lifecycle that can cause issue, and the more students an institution has, the more varied these can become. These can include taking a year out, temporarily withdrawing or changing course. The provision of courses can also affect complexity in many ways, such as when institutions offer multiple intakes in an academic cycle, module selection, closed courses and fall-back awards.

### **Levels of Stress**

Finally, and one of the main catalysts for this piece of research is the issue of stress. A common feeling amongst HE staff who work on HESA is that it is a stressful piece of work. The complexity, the time frames, the scrutiny, limited resource, limited understand of those not directly involved, the financial implications, managing change all add up to a potentially chaotic and disruptive piece of work to those hard working members of staff who strive to make sure the deadlines are met. This then adds the possibility of the negative impact stress can have on individuals and the work they are doing. What the researcher does believe is that there is plenty that can be done to reduce the levels of stress felt by staff members that are part of this process each year. This would lead to a positive impact on the effectiveness and efficiency of the HESA process.

For examples of errors, please see Appendix 1.0

## Literature Review

### Measuring Effectiveness and Efficiencies

Cowan (1985, p235) states that 'Educational institutions tend to measure performance in global terms'. And though many years have passed since Cowan's comments, it is still true today in terms of measuring success, senior management focus on the end result; the pass rates of students, the overall cost per students, and the success of projects are a few examples. HESA is a perfect example of this, across an institution if the HESA submission date is met and signed off then this is seen as success, usually by those in a senior management position who do not have any involvement in the work to get to that point. What this does not show is the journey it took to reach that point of success. Cowan goes on to define efficiency and effectiveness and to give these meaning in HE; 'Efficiency is the ratio of output to input; effectiveness is the ratio of the actual outcome to the possible or ideal outcome' and this is supported by Ostroff and Schmitt (1993). The issue with this definition is attributing meaningful labels or units to the input, output and outcome variables, and Cowan discusses the problems surrounding this as for any system or organisation these could be open to interpretation or personal preference depending on who is doing the analysis. For example, in HESA terms, the output could be the final data file, the final HESA report, or the funding that this goes onto generate for the institution. The input could be the student data, or the resource/effort of staff. The outcome could be the date of submission, the amount of post submission queries or, like the output, the money that this goes onto generate for the institution.

There is much debate over efficiency and effectiveness. Ostroff and Schmitt (1993, p1345) state that Katz and Kahn (1978) suggest that 'the best performing organisations are both effective and efficient. This seems a wonderful truism and what it does not highlight is that it is more than just a need to be both effective and efficient; it is striking the right balance of the two. What is also important to note about this is that an organisation can be one without the other; they can be effective, without being efficient. For example, a HESA return can be seen as effective as it is successfully completed, but it has not been efficient to achieve that goal.

Cowan (1985) lists a number of advantages to analysing effectiveness and efficiency as highlighted in the introduction. Cowan (1985, p239) also went on to say that efficiency 'has seldom been properly explored in higher education'. The researcher would argue that where this may be the case in terms of research, efficiencies are always looked for in HE, if for nothing more than providing a better experience to students and/or cutting costs. It is important to note however that Cowan was an academic and addressed these issues from learning and teaching perspectives and not a business process viewpoint.

## Logical Incrementalism and Continual Service Improvement

"Logical Incrementalism" (LI) is a theory to aid the development of strategy within an organisation in small steps or stages. It is the sum of the total processes that add up to the strategy as a whole. The argument being that you cannot plan out a strategy from inception to implementation. Idenburg (1993, p135) states that 'planned implementation of a strategy from A to Z is an illusion'. For HESA the researcher asserts that a team, broaching the piece of work for the first time, could not adequately sit down and formulate a plan and implement it. Thus, Quinn (1978) suggests that 'strategies tend to emerge from a series of "strategic subsystems"' and that it is the logic behind these subsystems that lend strength to formulating a strategy. Idenburg goes on to explain how a process 'develops in phases' and each part of that development is dependent on the previous version and the logic attached to it. This is important for the work of HESA as each level of error and rule all follow a logical path through to solution. What tends to happen however is each year a single error will be resolved in the exact same way, with no improvement to the way it is resolved. Often there is a forced change to the process due to external factors, and then the process may go in to a new phase. This however would be classed as more reactive "Logical Incrementalism" than proactive or done as a matter of course.

To complement, support and balance the above, Audretsch et al (2011, p 1922) define Continuous Service Improvement (CSI) as 'systematic management approach that seeks to achieve ongoing incremental performance enhancements through a gradual never-ending change process, focused on increasing the effectiveness and/or efficiency of an organisation to fulfil its objectives'. Though this sounds similar to "Logical Incrementalism", the difference is ultimately that this is an ongoing approach, and LI is done in a phased approach. There must also be some room to be able to say this is where we want to be, this is the best way for the process to work and therefore there is no longer a need for CSI.

Both of these concepts align to a formal approach to change and are offered here as an example where theorists claim there are benefits to adopting a method for improvement through change and offer different options, with similar goals, for institutions to think about in relation to how best to improve processes for the HESA return. Due to HESA's annual cyclic nature however, it lends itself to having a certain window to look at what has happened in the past year, understand the change coming in the next year and improve upon from there. However it is the changes put forward by HESA that have to be dealt with and therefore tend to receive a greater portion of the resources available. It also does not necessarily need a model or framework such as LI or CSI, but it certainly needs something that institutions can use and see the benefit and value of.

## Organisational Inertia

Roodt, Kinnear and Erwee (2003, p1) define Organisational Inertia 'as the resistance of an organisation to make transitions and an organisations inability to quickly and effectively react to change'. Gilbert (2005, p741) defines it as 'the tendency of a mature organization to continue on its current trajectory'. The concept of Organisation Inertia for the purpose of this research is simply put as an organisation that carries out processes in the same way without review because that is the way it has always been done. Most people will be familiar with the saying 'if it's not broke, don't fix it'. What this saying moves away from though is any room for improvement to processes that could impact on effectiveness and efficiencies. Organisations that are guilty of this are suffering from Organisation Inertia. Gilbert (2005) goes on to break it down into two elements; Resource Rigidity and Routine Rigidity. Resource is aligned to motivation or the ability to respond and Routine is how it is responded to. This applies to HESA and this research as many may feel that processes cannot be improved upon because resource is not available to make those improvements or as the process is a matter of routine, nobody thinks that it needs changing or improving upon. There is also a lot of theory surrounding resistance to change, especially in organisations. Roodt, Kinnear and Erwee (2003) found that there are a number of factors that contribute to this phenomenon:

- Lack of involvement in change
- Lack of leaderships vision to support change
- The Organisation's attitude to change
- Lack of an effective change management process
- Business composition
- Systems that cannot adequately accommodate change
- Peoples personal experiences
- Lack of motivation

In complex organisations such as HE institutions, it becomes evident from the above list how all of those factors could be apparent within them. And if they are indeed evident within a team, it is logical to assume that they would all add up to formulating resistance to change for all involved.

## High Staff Turnover

In the researcher's experience the impact of staff turnover on the effectiveness and efficiencies of delivering a service has never severely impacted on an organisation they have worked for, but has impacted on a team and the work being done. What the researcher has also witnessed as common practice (or lack thereof) is that little (or nothing) is done to retain staff, especially at lower levels, whose skills, experience or tacit knowledge is valuable to the team/organisation. Knapp, Harissis and Missiakoulis (1981) state that 'the rate at which staff change jobs has long posed a serious problem for employers'. According to them staff turnover can be disruptive and have financial implications. Pieper et al (1974, p22) supports this stating that 'employee

turnover has been a recognised problem for centuries'. The researcher would go on to say that there are other knock on effects from staff turnover such as resource implications, work may have to be spread over other individuals whilst a replacement is sought. The researcher would also say that 33 years later this is even more of a problem as life-long careers are no longer a norm, the rate that staff change jobs has significantly increased.

Though the issues discussed in chapter 1 pertain to the turnover of non-senior staff, it is worth noting that there is a lot of research done with regards to turnover of senior management figures, what this means and says about the organisation and how this can positively or negatively impact on the effectiveness and efficiency of the work, team and/or organisation. Ostroff and Schmitt (1993) suggest that turnover at a more senior level can be due to poor organisational performance and lead to an increase in efficiency but a decrease in effectiveness.

This is a difficult area for managers. It depends on what kind of manager you are. Do you push your staff, supporting in their development and happy when they move on? Or do you do what you can to retain the workers whose skills and experience maybe worth more than the role they are in? Either way, this is not raised here as a way to prevent the inevitable phenomena of high staff turnover, but more to mitigate the impact this can have on a team. Knapp, Harissis and Missiakoulis (1981, p20) conclude in their research that it is 'possible to predict, on the basis of previous behaviours, the likelihood of each individual staff member leaving employment'. They go on to state several factors that can affect this prediction. This would be a useful tool to identify those groups of staff who have a higher chance of leaving to inform which areas of work they may be responsible for. This information can then be used to ensure that the training/instructions/ documents for those areas of work are the most comprehensive. For example, one of the lowest levels of HESA errors centres on data quality of postcodes. It is one of those areas where it is given to the lower grade staff, the grade at which means they are likely to move on and not be around the following year with the knowledge of postcode related errors that they have developed. Having comprehensive documentation and process guidance to rectify these errors would mitigate any issues, problems, or time taken to train new staff should that staff member leave.

### **Importance of Data Quality**

Strong, Lee and Wang (1997) ascertain that there are three groups of people who have either an impact or are impacted by data quality. These are defined as the Data Producers, Data Custodians, and Data Consumers. For this research the Data Producers would be Students and Staff, the Custodians would be those centrally located staff co-ordinating the HESA return and the direct consumers would be HESA themselves. It is HESA directing an institution that the data is in some way incorrect and though this can cause frustration at the institution level, they rightly do not know the data. The system

structure of any given institution which is supported in terms of HESA being a Data Consumer in Strong, Lee and Wang (1997, p105) stating that 'data consumers do not know the source to which quality problems should be attributed; they only know that the data is conflicting'. They also highlighted the fact that there is little research on measuring and addressing poor data quality suggesting that most data quality concerns only become address by organisations because of non-data quality related projects that highlight issues. Redman (1998) highlights several impacting factors poor data quality can have on an organisation. These include increased costs, less effective decision making, impact on strategy, breeding organisational mistrust and can damage employee morale. Unlike Strong, Lee and Wang, who used a wide range of organisations from Hospitals to Airlines, Redman's research focuses solely on consumer organisations where a service is provided. Though not directly comparable with the HE sector, these suggestions of negative impacts due to poor data quality can easily translate across and more pertinently direct examples from the HESA process can be attributed to these factors. Redman discusses how it can impact on the decision making capabilities of Managers. For example, how can a Student Record Manager make a valid response to a Minerva query if the data in question cannot be trusted? Redman also goes on to state that 'poor data quality makes it more difficult to re-engineer' and HE institutions are certainly guilty of becoming embedded in processes that are seen as the norm or are seen as too big a task to change/reengineer (see section on Organisational Inertia).

### **Crisis Situation Management**

Pearson and Clair (1998, p60) state that an organisational crisis 'is a low-probability, high impact event that threatens the viability of an organisation.' The management of which, they state as 'a systematic attempt by organisational members with external stakeholders to avert crises or to effectively manage those that do occur'. This is very similar to the risk assessment stage of a project management methodology that commonly occurs, assessing the likelihood of a risk/crisis happening, the impact it would have and the contingency in place should that risk occur. They also state that these situations can stem from issues in three areas:

- Technological
- Social-Political
- Psychological

Crisis situation management may seem like a dramatic and sensationalised piece of theory to include in this research. Pearson and Clair (1998) offer an array of events that could fall into their definition below (eg, hostile takeover, executive kidnapping, bribery). However the definition they offer can be used in a wider and less sensational context than the research was written in. In the context of HESA, the crises that can occur often happen late in the cycle and can include a change in data that has been missed and therefore needs to be

implemented captured and reported as a matter of urgency, or a realisation that previously reported data is incorrect. The data in that situation needs correcting and then an explanation of why it has been incorrectly reported previously would need submitting (Minerva query stage). The threat to the organisation becomes the financial impact this could have on an institution. What could be worrying for an organisation is that Kash and Darling (1998, p180) state that 'when it comes to crisis management, they often fail to think and prepare for those eventualities'.

The other side to citing crisis situation management, and links intrinsically to diseconomies of time compression and personality traits of those involved, is that some people work naturally in a crisis, and "crisis mode" can be entered when an immovable deadline is fast approaching.

### **Capability Maturity Model Integration (CMMI)**

Following a wider phenomenon of system and software models being adapted, reworded and/or modified to be used for business process and human resources, Wademan, Spuches and Doughty (2007) adapted the CMMI into the People Capability Maturity Model. It is easy, and somewhat natural to adopt the CMMI for business processes. As Paulk, Curtis and Chrissis (1993) state that the Capability Maturity Model can 'enhance software-development and maintenance capability', so too does the researcher believe that this is a tool that can be used to enhance business process development and the maintenance of that process. The most crucial part of CMMI pertaining to this research is that it advises an organisation to identify the maturity of a current process(es) and more importantly, identify the most important issues to address to improve those processes (Paulk, Curtis and Chrissis 1993). The CMMI goes on to advise that those processes need to be limited to a focussed number of activities and a set of sensible goals need to be realised. Members of an organisation need to be honest with themselves with regards to how mature their processes are.

Paulk, Curtis and Chrissis (1993, p3) state the following as a fundamental concept of CMM:

*'A software process is a set of activities, methods, practices and transformations that people use to develop and maintain software and associated products.'*

This can be directly translated to become relevant to HESA:

The HESA process is a set of activities, processes and transformations using a variety of methods that an institution uses to maintain and correct data quality and produce a valid HESA file.

The second part of the fundamental CMM concepts is that 'as an organisation matures, the software process becomes better defined and more consistently implemented (Paulk, Curtis and Chrissis 1993). This is the part that the

researcher doubts many institutions would agree takes place, but is the benefit that CMM could bring.

Relating to Continuous Service Improvement and Logical Incrementalism, CMM supports both these with Paulk, Curtis and Chrissis (1993, p7) stating that 'continuous process improvement is based on many small evolutionary steps'. It is common for trainers, as part of training or at events when talking to members of different institutions, when talking about CMM to try and gauge where staff think they would place their organisation on the maturity framework - the researcher has only ever received the answer of 2 - repeatable/reactionary.

### **Leadership Styles/Personality Traits**

The concept of leadership and ownership of work maybe a peculiar direction to take but what is interesting about it is how different leadership styles may effect, dictate or impact on an institutions method of how the HESA return is conducted. Senge (1990, p340) states that the 'traditional view of leadership is based on the assumptions of people's powerlessness, their lack of personal vision and inability to master forces of change'. Senge goes onto state that in new, so-called 'learning organisations', leaders are now more akin to teachers or stewards, guiding and empowering a team to achieve a common vision and goal. Are these two views too simplistic to look at further? Perhaps, but it is a good place to begin.

### **The 5 P's for Strategy**

It is not known yet the breadth and diversity of HEI's various strategies and methods for tackling HESA. Though all will have some form of strategy, how many will have this documented? And how many will have adopted some formal strategic approach?

Mintzberg (1987) devised 5 Ps for strategy, suggesting that one definition is not enough. The 5 Ps are plan, ploy, pattern, position and perspective.

Plans and ploys overlap in Mintzberg's work with ploy being more of a threat of action and a plan is a 'course of action to deal with a situation'. Strategy as pattern pertains to behaviour, how consistent it is. It is the case that an organisations pattern defines what its strategy comes to be, where the reverse is true of strategy as a plan. As institutions have few direct competitors and would be more likely to work together for a solution to a common problem, strategy as position has no bearing here as it is more to do with competition and an organisation having a niche position. The final strategy, that of perspective is discussed as only being a concept, and that is all that strategy is, irrespective of which P one might wish to adopt. Mintzberg also suggests that strategy is something quite intangible

It would seem to be that most HEIs, whether they know it or not, have strategy as pattern (speaking in terms of HESA only) as a way of describing how work

has taken place after it has happened. The question is would it be more beneficial to have strategy as plan 'to regulate behaviour before it takes place'?

### **Devolved vs Centralised Models**

In HEI's, and specifically in terms of HESA, the terms of devolved or decentralised and centralised models of working centre on the working relationships between those who coordinate the HESA return, and those who may be involved in any form of HESA work. This can be wholly devolved, wholly centralised or more commonly and mixture of the two.

Jarzabkowski (2002) suggests there are 3 main factors why an organisation may run a centralised model:

- Improved coordination
- Quality monitoring
- Cost Reduction

Whereas decentralised models 'favour current areas of strength' and 'attract resources'. Although Jarzabkowski discusses the benefits or reasons for each, it is discussed in more of a general way for HEI's and does not address the issue of migrating from one model to another, or the impact that could have. And, though Jarzabkowski's research is HE specific, it is only a senior/executive management level perspective of three red brick institutions.

### **Research Design and Methods**

This research was a case study using qualitative techniques using an inductive approach. The inductive method was chosen as it was seen as the most pragmatic way to approach this, starting with the information to help formulate a conclusion or hypothesis, rather than taking a deductive approach and starting with a hypothesis and trying to prove/disprove it. Due to the researcher's background it would have been relatively simple to formulate hypotheses but these could have then introduced researcher bias which taking an inductive approach hoped to circumvent.

The investigative method comprised of interviews of three Student Record Managers from three different institutions. Interviews were conducted in two stages. As some discussion surrounding HESA can be sensitive to an institution, interviewees were informed that all pertinent information to the research and anything that was to be used or quoted would be anonymised and any information or quote that could easily identify the institution would be omitted. The three institutions have been labelled X, Y and Z.

Gummesson (2007, p244) stated that research of this type 'requires pre-understanding of institutional conditions of the object under study'. Stenbacka (2001, p553) defines pre-understanding as the 'understood knowledge, insights and experience that accompanies the researcher entering the process of

research' and raises the issue of first and second hand pre-understanding. Stenbacka (2001, p553) goes on to quote Gummesson stating that 'Gummesson asserts that first-hand pre-understanding is much more valuable to a study'. The researcher is fortunate to have first-hand hand pre-understanding of the processes and issues surrounding this case study, having worked both directly and indirectly on the HESA process for the past four years.

Due to the relationship (or lack of) of the researcher to the interviewees, a combination of Kvale's theory of the journey and mining and Joharis window was adopted. Stage 1 interviews were used to set the scene of the research and give the interviewee a chance to become more comfortable with the researcher. Therefore the researcher presented their knowledge of HESA and the "journey" they go through to encourage the interviewee to reciprocate. The idea being that stage 2 interviews could then be conducted after a rapport had been developed between the researcher and interviewee allowing a more open discourse and the ability for the researcher to probe further into the issues being discussed. The stage 1 interviews were seen as the journey to establish what both the researcher and interviewee know. This is the "Open" part of the Johari Window. Stage 2 interviews were seen as a mining stage and an opportunity to find out what the interviewee knows but what the researcher does not know, which is depicted as the Blind Spot in the Johari Window. The hidden domain is what the researcher is keeping from the interviewee and the Unknown domain refers to that which neither the researcher or interviewee knows.

**Johari's Window:**

	Known to Self	Not known to self
Known to others	<b>OPEN</b>	<b>BLIND SPOT</b>
Not known to others	<b>HIDDEN</b>	<b>UNKNOWN</b>

*The Johari Window taken from  
[http://www.jcu.edu.au/wiledpack/modules/feedback/JCU\\_090549.html](http://www.jcu.edu.au/wiledpack/modules/feedback/JCU_090549.html)*

Although from an ethnographic point of a view there has been an element of insider research due the researcher's involvement with HESA work in the past, this research was carried out with no intent or bias. No hypotheses had been derived from previous knowledge nor was there an agenda in mind.

## Results

Analysis of the interviews was conducted using the Grounded Theory technique (Glaser and Strauss 2009). Key quotes were documented (see Appendix 2.0) and were assigned a code depending on the theme of the quote. After listening to the interview recordings again, several common themes became apparent. These included Organisational Structure, Staffing, Data Quality and Knowledge Transfer. Acronyms or abbreviations of these were aligned to the relevant quote and put into tables (see below) to provide easy comparison to what was said from another institution talking about the same theme. Those captured in the tables below are the quotes most relevant for comparison. Some themes may have had many quotes assigned to theme, but as the themes are all large areas in scope, not all quotes were relevant to compare against each other. For the full coded table of quotes please see appendix 3.0.

**Table 1.0**

Table to compare responses to areas of discussion during stage 1 interviews. For full table, see Appendix 3.1.1.

Code	Institution X	Institution Y	Institution Z
<b>CSI</b>	4:52 - We have an improvements list in 12/13 for 13/14, 14/15	6:29 - There's always a lot of development work to do, we rarely leave things untouched year on year.	Developments for future HESA years are continuous and run parallel to the current HESA year and are developed within the team.
<b>H</b>	8:06 - HESA have been delaying the release of their validation kit, past few years going well into April.	4:52 - For an institution of our size, we cannot leave it long enough, we cannot leave it until the validation kit is made available to us,	HESA validation kit is used as soon as is available or as soon as is needed.
<b>T</b>		8:24 - Often we cannot do that until we got our upgraded system in around Easter time.	ASIS upgrades are the responsibility of CLS (Computing and Library Services).
<b>R</b>	12:30 - You hit August and the problem with August, a lot of people are very busy and can't help you.	27:15 - However the fact of the matter is we are so busy...that our ability to re-engineer those processes successfully is severely limited and it is enormously frustrating.	
<b>St</b>	27:35 - It's quite challenging.	23:59 - It is the case that we struggle to find and retain people who can do this sort of work.	Staff retention is more of an issue within Schools and not so much within the Admissions and Records team.

<b>Str</b>	18:45 - Module maintenance is one of the biggest stresses that we've got.	13:51 - Managing that is always a challenge because we are always fighting what are extremely challenging timescales for getting the work done.	
<b>E</b>	27:43 - Because every year we hit the point where something has gone wrong.	36:56 - I think it takes us collectively too much effort to get over that hurdle.	
<b>DQ</b>	13:24 - We look at our qualification on entry data in parallel throughout the year.	27:13 - Our holy grail is around designing processes that will get the data right at source.	Ongoing data quality exercises start as soon as the HESA cycle finishes in the form of data quality excel reports.
<b>IS</b>		4:52 - For an institution of our size, we cannot leave it long enough, we cannot leave it until the validation kit is made available to us, we need to get working on our data quality as soon as the new data starts coming in.	The complexity of an institutions provision only adds to the complexity of the work needed for the HESA return.
<b>KT</b>	19.11 We do introduction to HESA seminars for departments.	7:05 - Trying to disseminate and to address problems of user understanding.	HESA seminars/roadshows are held inform the wider staff community about the importance of HESA.
<b>OS</b>	17:19 - We rarely go back to the department for information.		We also have the ASIS Team within our area who work on developments.
<b>CvD</b>	17:19 - We rarely go back to the department for information.		The Admissions and Records department are responsible for, and "own" the student record.
<b>Pre</b>	40:47 - We do a lot of pre-emptive work.	4:31 - Our preparation database is really a series of Access databases and queries, extraordinarily complex, built up over a period of years.	Ongoing data quality exercises start as soon as the HESA cycle finishes in the form of data quality excel reports.
<b>SMT</b>		32:41 - Other than our immediate line management nobody is really interested in the process of putting in the return but everybody is very interested in what comes out.	In terms of keeping records accurate, the PVC responsible for retention is provided reports of students withdrawing/not enrolling and it is known that that information has a high level of visibility.
<b>Doc</b>	32:56 - If you document it, next year it will be different.	22:13 - I know that HESA have revamped their website fairly recently with new comers in mind and I think that's to be applauded as a specialist I find their website easy now.	

**Table 2.0**

The quotes coded and compared in table 1.0 were used to derive questions to be asked in stage 2 interviews. For table of codes see Appendix 3.1.0.

<b>Code</b>	<b>Question</b>
<b>Ch</b>	What impact does the issue of imposed change have on the HESA process at your institution?
<b>OS</b>	Who would be responsible for these changes to the system either those brought about by HESA or those to improve current processes?
<b>SMT</b>	Are the SMT only interested in the successful completion of the HESA return or do they have any input to the process?
<b>IS</b>	If the SMT had an increased knowledge of the complexity of HESA and how this increases with the size and complexity of the provision of the institution, do you think processes would be put in place to curtail the effects those processes have?
<b>H &amp; Pr</b>	How much of a benefit do you think it would be if HESA were to release the validation KIT much earlier?
<b>Str &amp; E</b>	Do you think the importance of the completion of a successful HESA return warrants the stress caused and/or effort put in to it?
<b>R &amp; CSI</b>	How much of a benefit would it be to your team and what impact would it have to have someone solely responsible for improvements to HESA processes and the provision/development of pre-emptive tools?
<b>CvD</b>	Do you think the organisational structure of your institution has any impact, either negative or positive and the HESA return?
<b>Pre &amp; Pr</b>	How important is pre-emptive work and where do you think you would be without it?
<b>T &amp; Pr</b>	How much do system upgrades impact on your work and would your timeline be different without it of if it happened at a different time of year?
<b>Doc</b>	Do you think the constant change HESA imposes on institutions means that adequate documentation of HESA processes is an unrealistic goal?
<b>St &amp; R</b>	Has staff retention ever been an issue or impacted on the HESA return?
<b>DQ</b>	Do you think the focus of data quality really should be because of HESA, or do you think there would be a universal benefit if the importance of data quality was looked at in a more holistic way.
<b>KT</b>	If you go out to department/faculty/school staff to educate them about HESA, but you continue to have issues, do you think more can be done?

**Table 3.0**

Table of quotes from stage 2 interviews to show and compare responses between each institution. For full table, see Appendix 3.1.2.

<b>Code</b>	<b>Institution X</b>	<b>Institution Y</b>	<b>Institution Z</b>
<b>Ch</b>	0:57 - It changes the relationships with departments.	00:28 - It depends on what the change is.	0:46 - It's about how you collect that and where and the timescales for that so that has an impact.
<b>OS</b>			
<b>SMT</b>	6:33 - It does very much feel like something has to go very wrong for anyone to actually think that you need any help.	03:10 - The other time when there is significant involvement of what can often be very many senior managers and senior academics is if the outputs from the HESA return are not what people thought that they should be.	13.21 - I don't think there is an appreciation, again, at sort of maybe senior level, how stressful it actually is.
<b>IS</b>	9:36 - We are pretty conservative so most of our students will start in September.	05:06 - Do I think that if it was better understood what a monster this is that the University would actually be more structured in some of its processes? No I don't.	8:22 - For us definitely.
<b>H &amp; Pr</b>	10:15 - It would be helpful. I guess everyone has found a way of dealing with that internally.	06:08 - I don't think there's much benefit to us.	9:40 - Yes.
<b>Str &amp; E</b>	13:06 - Sometimes the way that HESA is handled internally, I think for each institution makes it more stressful than it has to be.	07:39 - I think the consequences of not getting it in and not getting it right are now so great that I think the stress is probably inevitable.	11:56 - It is a stressful time.
<b>CSI &amp; R</b>	15:37 - I think we're in a position where it wouldn't be a full year full time job.	08:59 - The business processes that lead up to the HESA return are so entangled in so many different areas of the University I'm not sure a one-person/FTE would actually ever do it because it often entails entire areas changing.	17:42 - It's all interlinked.
<b>CvD</b>	16:42 - The fact that we have don't have faculties and have to go to individual departments is a hindrance.	10:12 - If we, as a team were more devolved or more dispersed I think we would have much greater difficulty in achieving what we achieve.	20:16 - We have somebody in each school who devolve responsibilities to everybody... They are expert users of the system at a local level.
<b>Pre &amp; Pr</b>	18:46 - If we started looking at things in April we would be in a very difficult position.	10:41 - We would never get it finished on time.	23:14 - It's very important.
<b>T &amp; Pr</b>	21:43 - I can certainly see why if you were doing an upgrade at the wrong time of year that would be a	11:45 - It would be easier if it were slightly earlier in the year.	25:40 - Not really no.

	bad thing.		
<b>Doc</b>	22:55 - You could document it in more detail but I do find that perhaps you do get to the point where the effort perhaps would not be worth the outcome to maintain documents at that kind of level.	12:59 - I think HESA themselves do extremely well in terms of keeping their documentation accurate.	27:38 - As far as the HESA processes are concerned it's just impossible.
<b>St &amp; R</b>	6:18 - We are traditionally under staffed and it's very difficult.	14:01 - When we were a smaller group of people, where we had one person potentially leaving it would have had a much greater impact.	28:16 - It's more the fact it's the people that are responsible for actually inputting the data and their understanding.
<b>DQ</b>	28:20 - HESA helped but it shouldn't be the reason for it.	15:09 - The HESA process gives us is a possibility of having data definitions imposed upon us.	33:30 - Initial improvements because of HESA.
<b>KT</b>	30:28 - There needs to be senior management buy-in in order for that to filter down.	19:44 - If we had the time and the resources then there is an awful lot more we could do.	30:29 - We need to make them aware of why this is important.

## Critical Discussion

### Research Methods Used

As responses for stage 1 interviews were collated and assigned codes, common issues or theme, regardless of whether the response was positive or negative, started to become apparent. These were then used to formulate the questions asked in stage 2. Stage 2 interviews were then used to obtain deeper information about the issues raised in stage 1.

A possible issue with this method is that interpretation of what has been said could be considered to be very subjective. Even knowing the context of what has been quoted, for example around the issue of Data Quality, the researcher could have taken this as an issue of Process. Quotes that could have had meaning in different areas were assigned multiple codes to allow full comparison. However this will have still been down to interpretation and therefore could have been influenced by any researcher bias. There is also always the chance when interviewing, that the interviewee can be prone to giving you the answer they think you want to hear instead, or they answer the question in a way which the question did not intend. Another potential problem with grounded theory is that, given time constraints, it can bypass issues. For example if you codify a set of responses/interviews and then focus on these codes/themes in the follow up interviews, these are all that become focussed on, otherwise you would be carrying on the journey part of stage 1 interviews into stage 2. Obviously with more time this would not be an issue and potentially research could need a 3rd stage of interviews.

Though the researcher had not intended to introduce any bias or ethnographic elements to this research, the themes that came out of the stage 1 interviews were the same as those included in Chapter 1. It is hard to say for certain whether this was actually because these are very common issues or if the researcher inadvertently led the interviews to arrive at those discussions. However these themes and the discussions of them prior to this research were the initial catalysts so this point could in fact be of no consequence but it would be naïve to suggest that the researcher was not entirely value neutral. This raises another issue with this method of research, in that it is quite possible to pick and choose what one uses from an interview which may not paint the whole picture given but can sway an argument in favour of the research. This raises the question of ethics in research and should be in the mind of any researcher to present a true and accurate account of what was said.

Restrictions of the method used include a small sample due to time constraints. It could easily be argued that three institutions at a higher management level are not representative of the overall picture. The type of institution may offer different results, as could interviewing different types of staff.

As discussed in the Research Methods and Design section, Kvale's approach of the Data Journey and Data Mining was adopted. It was initially thought that stage 1 interviews would be the journey and the stage 2 interviews would be used for data mining. As it turned out, there was much more of a mixture of both journey and mining in both stages of the interviews, though the split of each varied depending on relationship (or whether one previously existed) between the researcher and the interviewee.

<b><i>Institution</i></b>	<b>X</b>	<b>X</b>	<b>Y</b>	<b>Y</b>	<b>Z</b>	<b>Z</b>
<i>Interview Stage</i>	1	2	1	2	1	2
<i>Relationship</i>	Low	Low	High	High	None	Low
<i>Journey (%)</i>	60	40	30	10	90	70
<i>Mining (%)</i>	40	60	70	90	10	30

The stage 2 interview length was also much shorter than stage 1. This could be due to the increase in mining and decrease in the journey and that stage 1 interviews did not provide enough information to mine for a longer time than was needed or that further probing by the researcher during the interview should have happened in that early stage. Another issue (and why a wholly mining interview would be laborious and not entirely useful) was that even though the percentage of mining experienced was less than expected, it would appear that mining leans towards shorter answers where the journey appeared

to open up more discussion. What became apparent where the relationship with the interviewee was strongest, the interview was the shortest length, with the greatest level of mining, but because of the pre-existing relationship, the answers to questions were succinct whilst still being explained to the level and detail the interviewee knew the researcher required.

An alternative approach to this case study would have been to perform a qualitative study. However, this was dismissed in the early stages of the research design due to time constraints and the possible complication of not being able to achieve an adequate and representative sample size. The researcher does believe that this approach, if performed correctly and with a good sample size, would provide a strong picture of the HESA landscape across HEI's in the UK.

*Nb. For the original research proposal please see Appendix 4.0.*

## **Outcomes of Results**

### ***HESA Process Timeline***

Institution X follows their own deadline and not those dates set by HESA (obviously prior to the final submission deadline), whereas Institutions Y and Z both work to those dates given by HESA. This does not seem to have any impact on an institutions HESA process as all perform pre-emptive work leading up to the final submission, regardless of when that submission is made.

### ***Release of HESA Validation Kit***

Though the general consensus was that an earlier release of the HESA validation kit would be beneficial, Institution Y felt that it would not be of much use to them, stating 'I don't think there's much benefit to us' (06:08) as even with the validation kit they would not be working with the right version of the student record system until they applied their annual upgrade in April. There was also some feeling that even if HESA did release the software earlier, it wouldn't be in a full state to use and further updates from them would have to be applied. There is also the issue that even though pre-emptive work is a necessity, running queries too early could generate just as many errors as leaving it until later in the cycle. Running queries too early in the cycle could mean that the data is not in a ready state and will therefore have an impact on the amount of errors generated.

### ***Pre-Emptive Measures and Data Quality***

All institutions do an element of pre-emptive work leading up to the HESA software being released. This is interesting due to the amount of stress and effort needed to still do the work. Could it be that the amount of pre-emptive work could be increased and therefore decrease the amount of effort and

stress? All institutions inferred that this was true, that the later in the cycle that the errors are looked at, the more problematic it is for them in terms of successfully completing the return.

All institutions seemed to suggest that the recognition of good data quality is a more focussed idea now than it has been in the past. Where they admit that good data quality should not exist solely for the purpose of HESA, they all admit that it is the HESA work that has started their journey to a more holistic approach to good data quality. The researcher believes, as time progresses, the pendulum will swing more in favour of overall data quality and that this will have a positive impact on the HESA process for all institutions that embed a holistic data quality approach.

### ***System and Process Changes***

When asked about change all institutions stated that it greatly depends on the nature of the change in question as to whether it may have any significant impact on either the institution or the timeline and delivery of the HESA process and submission. It was also suggested that it is not only the impact the change has when taking up valuable resource of the team who are responsible for implementation, but also the consequences of the change and what that means in terms of other teams if the change means they now have to collect new data or perform a new process. This has a direct impact on knowledge transfer as information and training may have to be given outside of the usual institution cycle for informing staff about HESA related activities.

It is also worth mentioning that a common theme throughout each discussion with regards to data collection exercises and factoring in changes and new requirements from HESA is that each institution utilise their form of an enrolment task within their student record system to collect that data. This is important as it reinforces what has been said about the interlinking nature of the data involved. HESA changes are having a knock-on effect and causing processes to be changed that may be entirely different if it was not for the needs of HESA.

There is a theory dubbed 'The Red Queen Effect'. This means that whilst businesses are evolving and improving, they are actually staying in the same place as they are not evolving or improving faster than external influences and factors that are moving faster than them. In their research, Voelpel et al (2004, p37) state that 'even though many companies work harder to improve themselves in increasingly fierce competitive environments, results improve slowly or not at all'. As each institution has some form of continuous improvement, yet struggle year on year, it could be that the improvements made are not significant enough due to external forces and imposed changes, and they are only evolving enough to keep their head above water.

### ***Institution Size***

Each institution agreed with the premise that the size of an institution and the complexity of its provision have a direct impact on the complexity of the HESA return. Where the institutions differed was where they thought any change to how they worked would either happen, or have any significant impact. For example, Institution Z has some processes that have been purposefully brought in to address the issues those processes had on HESA, whereas Institution Y stated that processes would not be changed to solely benefit HESA. Institution X felt unaffected by this question as they have fairly standard provision and delivery of courses.

### ***Knowledge Transfer***

All institutions perform variations of structured information delivery to staff that are not directly working on HESA but may be asked to do some form of data quality work to correct HESA errors. Often, these are annual events where the central department responsible for the HESA process go out to faculties/schools/departments and inform them of what HESA is, why it is important and why they might be asked to undertake tasks to resolve HESA issues. The annual nature of both the HESA cycle and the informing of staff lead all institutions back to the same problem of not enough staff knowledge outside of those staff directly involved with HESA work. Institution Y states that even though what they do is positively received, there is more that can be done, stating that 'if we had the time and the resources then there is an awful lot more we could do' (19:44). Institution Z spoke of the importance of this kind of communication to staff, whereas Institution X put forward the idea that if there was more buy-in from a senior management level, this would eventually filter down and have a positive impact on staff in terms of HESA knowledge.

### ***Centralised Vs. Devolved Models***

None of the institutions interviewed conduct the HESA return in a purely centralised or devolved way. All had a different mix of where responsibilities were split and benefits can be seen in each variant. All institutions spoke of how a purely centralised or devolved model would be unworkable. The key here is to have a mix that benefits the organisational structure of the institution by striking the correct balance to ensure they have the right staff operationally coordinating the HESA process, and knowledgeable staff out in faculties/schools/departments to liaise with to foster a positive and informed working relationship to prevent or remove potential barriers of asking staff to undertake work that they do not understand the purpose of.

### ***Documentation***

The researcher believes a fully documented HESA process would eradicate the problem of staff turnover. Process documentation is the salvation for complex processes and new staff. However it was the general feeling that with the

annual changes by HESA these documents could never be static and would need continually updating. Due to this, Institution Y stated that 'as far as the HESA processes are concerned it's just impossible' (27:38) and Institution X supporting this stating that 'the effort perhaps would not be worth the outcome to maintain documents at that kind of level' (22:59). Therefore, whilst this still remains the ideal situation, time, resource and continual change means that documentation to the level of granularity to cover the process of each HESA error just is not possible.

### ***Continuous Service Improvement and Logical Incrementalism***

Whilst all institutions perform continuous improvement year on year, it is more of an organic process absorbed by the team and directed by what has happened in the previous cycle. The notion of having a staff member dedicated to CSI was not seen as viable by all three institutions with Institution Y stating that 'the business processes that lead up to the HESA return are so entangled in so many different areas of the University I'm not sure a one-person/FTE would actually ever do it because it often entails entire areas changing' (08:59) and Institution Z supporting this stating that 'it's all interlinked' (17:42). This means that if such a role was to exist, the individual appointed would need to have a vast, deep and over-arching knowledge of the institution's organisational structure, HESA processes, data structure, idiosyncrasies and nuances and how each of these are connected.

Continuous Service Improvement and "Logical Incrementalism" are intrinsically linked and "Logical Incrementalism" is a positive force. All institutions perform logical incremental changes and improvements year on year. Supporting what Idenburg suggested, the institutions do not sit down and strategize a plan, they have an evolving grown plan that is constant throughout the year.

### ***Impact of Upgrades***

Each institution works with the same software for the management of their student records. The supplier of this software offers two upgrades a year, one in November and one in May. It is up to the institution when and how they take these upgrades. It is common for institutions to take both upgrades for one year at the same time.

<b><i>Institution</i></b>	<b><i>X</i></b>	<b><i>Y</i></b>	<b><i>Z</i></b>
<b><i>Time of Upgrade</i></b>	<b><i>January</i></b>	<b><i>April</i></b>	<b><i>January &amp; March</i></b>
<b><i>Validation Kit Released</i></b>	<b><i>April</i></b>	<b><i>April</i></b>	<b><i>April</i></b>

Institution X and Z take the upgrade(s) prior to the HESA validation kit being released and therefore it has little impact on their HESA process and because of this both rightly said that there would be no benefit of moving when their upgrade takes place. Institution X did see the issue and stated that they 'can

certainly see why if you were doing an upgrade at the wrong time of year that would be a bad thing' (21:43). Institution Y performs a double upgrade during the same month that HESA releases the validation kit. They are then tied by the timeframe and successful completion of the upgrade as they will require the functionality of that upgrade and the changes to the HESA functionality within the software to accommodate that year's HESA changes. Though they did say there may be some benefit if the upgrade was conducted earlier in the year, they had already stated that University processes were unlikely to ever be changed to better serve HESA. It is however a definite impact on the HESA process for any institution due to the resource an upgrade process can take and the involvement of staff to adequately test the new version of the software. This means that staff members that are normally carrying out HESA work will have some of their time dedicated to the testing and if that testing takes place when HESA work could be happening then it affects the amount of resource dedicated to HESA at that point in time.

### ***Organisational Structure and Inertia***

Institution Y focussed less on discussion around organisation structure which was possibly to do with the pre-existing relationship that the researcher had with the interviewer. In contrast, Institution Z focussed very heavily on structure which is most likely the product of having no pre-existing relationship. Nothing new was discovered during the 2nd stage interviews. There are more pressing issues that have a clear impact on the HESA process and the institutions seemed to work to processes that best fit the organisational structure of their institution. There may be a 'best-fit' approach as to what kind of structure best benefits the HESA process, but more research would be needed to ascertain if there were any issues surrounding an institutions structure on the HESA return. What it may be advantageous to consider is the fact that where organisational structure has no direct impact, it may well be the foundation that other processes that do impact on HESA are built upon.

It is hard to say whether the institutions interviewed experience Organisational Inertia, and it is not a clear case of whether they do or do not. What the researcher suggests is that there are different levels of Organisational Inertia and these are compounded also by the Red Queen Effect - changes may be going on to make it appear Organisational Inertia is not taking place, but the changes that are taking place are only just keeping the process moving along. There may be areas where some improvement is being done, or the amount that is being improved is dependent on the resource available to make those improvements, what then suffers from Organisational Inertia is everything else that is left as is. As annual changes and improvements are made as "Routine", as suggested by Gilbert, and Organisational Inertia experienced in this context appears to be down to "Resource Rigidity".

## ***Staffing and Resource***

Each institution said that they were, at some time, adversely affected by the issue of staff retention and turnover. At Institution X it seems to be an ongoing issue, and is partly compounded by the fact that the central staff for conducting and coordinating the HESA return is relatively small. In comparison, Institution Y felt their team was now of a size, where, though still an issue, the negative effects of staff turnover could be more easily absorbed, but supported Institution X's view, stating that 'when we were a smaller group of people, where we had one person potentially leaving it would have had a much greater impact' (14:01). Institution Z offered a different viewpoint on the problem of staff turnover. They said that the team itself was relatively stable and staff retention had never been an issue. Where staff retention was a problem at Institution Z was where staff out in the business, within faculties/schools/departments experienced high turnover. This had an adverse effect as not only was valuable experience being lost, but new staff coming in meant that previous barriers of staff's limited knowledge of the importance of HESA were brought back into play.

## ***Stress and Effort***

HESA is a stressful process. Many of the issues discussed in Chapter 1 have a negative impact on the HESA process in some way. The ultimate eventuality of these negative effects is an increase in the amount of stress experienced by individuals or teams that work on it. Institution Y said that it is an inevitable part of the complexity and importance of the process. What none of the institutions seemed to be able to do anything about is managing and trying to reduce that stress, mainly attributing this to the fact that anything they could do to ease these issues would require resource that just is not available. What was apparent very quickly was the interconnectivity of each of the issues presented here and that all could be linked to stress in some way:

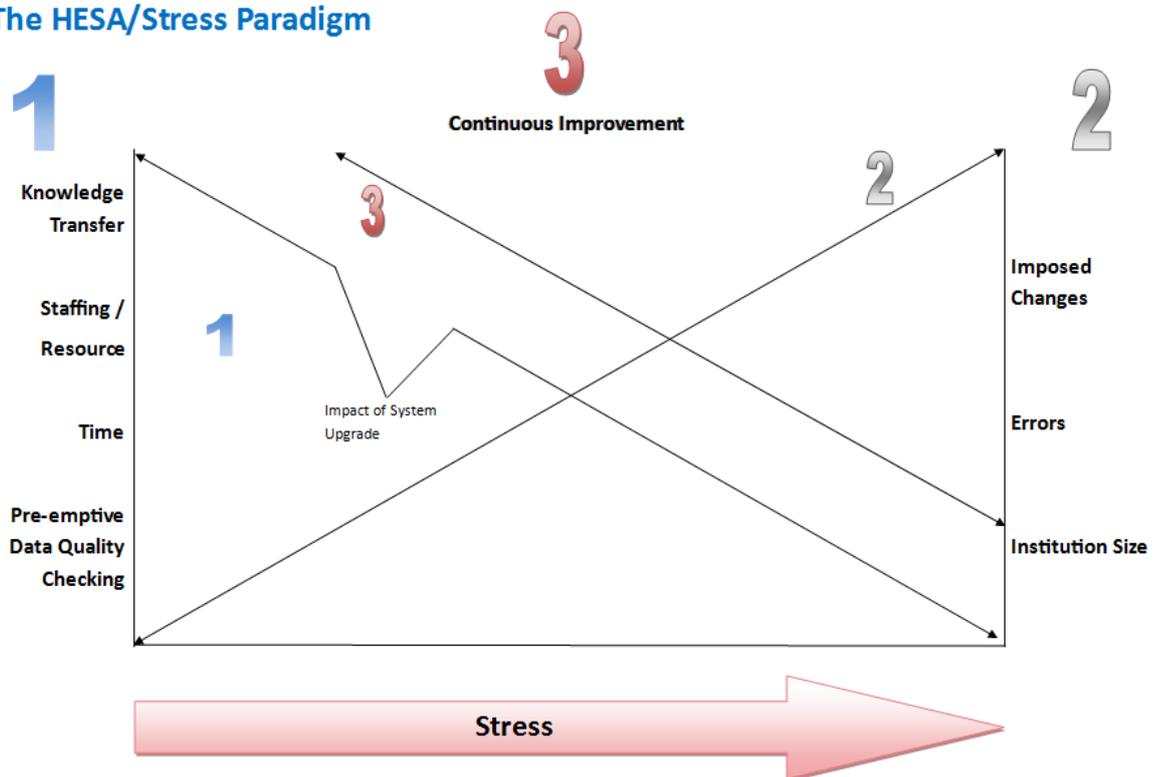


Before discussing the problems that stress can bring any further, it would be prudent to raise the issue that many will have heard before, that a small amount

of stress is a good thing. Senge had a theory of 'Creative Tension' which could be attributed to the positive side of stress. Smith (2001), in discussing Senge's work stated that creative tension was 'managing the gap between vision and reality'. Although the researcher can see the benefit in fostering an environment that stimulated the creative tension within staff to evoke a sense of purpose and form a catalyst for further effort, it does not appear to be an active phenomenon in this context or from this research. It appears to the researcher that the high level of stress pertaining to HESA stems directly from the work that is required, and is not something that is purposefully created by leaders to ensure maximum productivity from staff.

Therefore the researcher has formulated the HESA/Stress paradigm as a means to illustrate to institutions the key themes in this research and how they link to stress as an attempt to promote how each of these issues affected the level of stress that was attributed to the HESA process and how an increase/decrease of these issues brought about an increase/decrease on the level of stress experienced.

### The HESA/Stress Paradigm



*\*The graph is representative of the concept and not a timeline.*

This model represents the key areas discussed in this research that have an impact on the HESA process. As stress is the prime detrimental factor during a HESA cycle, this model shows how the key areas can increase or decrease levels of stress. For example, as time to complete the return decrease, the level of stress increase, when the numbers of HESA errors are high, levels of

stress will be increased. Equally, if the amount of pre-emptive work is increased, the level of stress will decrease. A point is also made on the model of how a system upgrade can have an impact. System upgrades take time and resource and as these are taken away from the HESA process, stress on the HESA process will increase.

What is left off the HESA/Stress Paradigm is effort as it was unknown how and where to place this variable. More effort could be put in to decrease stress by achieving results. However the opposite could also be true, that increased stress could invoke more effort by those individuals involved. It will most likely depend on which comes first and could be a question for further research.

### **Reflection**

In this piece of work, I, as the research have developed and learnt new skills and have become aware of a variety of theory and techniques that can be utilised in the future. For example, I will be more aware of interview techniques and how business relationships can develop over time. It is also of help to understand the potential barriers when needing to obtain information from somebody. It is also apparent how these interview techniques can be transferred into general conversation when networking. This is a key skill set to help my current career path as part of my current role centres on stakeholder management and business relationship management. I have seen the differences previously in working with those with whom I already had an established, existing relationship, compared with those who I am meeting for the first time. I now have some context to these experiences into thanks to this research.

The difficulties I have faced with this piece of research are mainly around the relationships between me and the interviewees. There was an inherent interpersonal relationship between myself and HESA, myself and the interviewees and the interviewees and HESA and we were all in a place where we are deeply invested in that work. Having said this, the relationships were a spectrum of either knowing the interviewee too well and concerned about broaching potentially sensitive/difficult subjects, or not knowing them well at all and when potentially sensitive/difficult subjects were broached, the information offered was limited. I recognise that there is not an ideal point on this spectrum to be. Though if it is a difficult subject matter, then having no relationship and building upon that using the Johari Window may be preferable.

I am also now aware of valuable organisational theory that I can already see present in my current role across the business, organisational inertia and "Logical Incrementalism" being two examples. This research means I can now speak confidently about the issues involved and provide advice and guidance where needed on how to improve business processes. This strengthens my

skill set for the role I am currently in and provides invaluable transferrable skills for the future of my career.

What has been of most interest to myself and feels like a powerful tool is using Kvale's Grounded Theory to codify and analyse qualitative data. This has already been utilised in my work to simplify requirements gathering processes from stakeholders to better facilitate how I deliver a service to them.

## **Further Research**

There were certain issues discussed in Chapter 1 that either did not arise in the interviews or the institutions involved did not see them as issues. As all issues in Chapter 1 derived from conversations with various staff members of various institutions involved with HESA the first area to direct further research would be to open it up to more institutions.

Further insight into organisational structure is another area which could benefit from further investigation to ascertain if there is a best-fit model that would improve the effectiveness and efficiencies of the HESA process.

There are also a number of issues that would most likely not come out from an interview situation as individuals/institutions may not be aware of, or wish to address. These could include organisational inertia, crisis situation management and dis-economies of time compression. Leadership styles and personality traits also did not arise as a theme as it would be difficult to broach this subject with the managers of those areas asking them to talk about their own leadership style. What a number of the issues pointed to, such as dedicated staff, staff turnover and documentation, is the area of knowledge management, which would also make for an interesting area of research in terms of HESA. For these areas insider research may be a way for these issues to be identified and investigated.

Other considerations to think of to perform wider comparisons and eliminate doubt or bias in any further research would be to look at:

- Level of staff being interviewed/surveyed
- Institution size
- Student Record System used
- Institution type (Red Brick/Russell Group vs "New" Universities)
- Institutions who fail to make the final HESA deadline vs those who do
- Stress Vs. Effort - Which should come first?

Finally there has been much theory discussed here such as Organisation Inertia, "Logical Incrementalism" and the Red Queen Effect. None of these were discussed during the interviews or came up as theme; for future research it would be useful to establish if institutions, at a business level, are aware of any

of these and if they believe they are subject to any of them and the issues they raise.

## **Conclusion**

This research intended to look at the process of the HESA return conducted by UK HE Institutions and the effectiveness and efficiencies of the processes that contribute to this work along with the issues these raise.

If we are to take the research and the results that have come from it as representative of the HE sector in the UK then there are many more variables that impact on the effectiveness and efficiencies of HESA processes and it is imperative that measures are put into place to control and monitor the variables on the HESA/Stress Paradigm.

This research has highlighted that not all common issues faced by institutions are ones that institutions believe are worth addressing such as adequate documentation. However it is clear that institutions need a healthy mix of inter-team working, embedded staff knowledge along with well-developed tools to help pre-empt the amount of work that comes when a HESA cycle is under way. Monitoring and controlling these variables are a way to manage the stressful impact HESA can have on those involved. However, it must always be remembered how intrinsically linked these variables are; combatting one will not cause any great affect compared to addressing a number of these issues together.

For those that may think the research is not representative then further research, either as a direct follow up to this or using the ideas put forward here, could be extremely useful to the sector to enable a full understanding of how institutions in the UK handle this large and complex piece of work.

Finally, HESA is a stressful piece of work to undertake. Everyone involved has other responsibilities and conflicting demands on their time. What this research shows is a small part of those issues that can directly impact on the stress felt by staff during the HESA process and how managing these can possibly reduce those levels of stress.

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# Appendix

## 1.0 Example HESA Errors

Rule number	Rule description
Schema Error	The 'COSTCN' element is invalid - The value '05,' is invalid according to its data type 'COSTCNCodeType' - The Enumeration constraint failed.
Schema Error	The 'COURSEAIM' element is invalid - The value '' is invalid according to its datatype 'COURSEAIMCodeType' - The Enumeration constraint failed.
Schema Error	The element 'Module' has incomplete content. List of possible elements expected: 'TINST, FRANIND, ModuleSubject'.
Schema Error	The 'FTE' element is invalid - The value '555.0' is invalid according to its datatype 'FTEType' - The MaxInclusive constraint failed.
Schema Error	The 'MODOUT' element is invalid - The value '' is invalid according to its datatype 'MODOUTCodeType' - The Enumeration constraint failed.
Schema Error	The 'MODSBJ' element is invalid - The value '020' is invalid according to its datatype 'MODSBJCodeType' - The Enumeration constraint failed.
Schema Error	The 'PGCESBJ' element is invalid - The value 'G400' is invalid according to its datatype 'PGCESBJCodeType' - The Enumeration constraint failed.
Schema Error	The 'PREVINST' element is invalid - The value 'H' is invalid according to its datatype 'PrevInstType' - The value 'H' is not valid according to any of the memberTypes of the union.
Schema Error	The 'QUALSBJ' element is invalid - The value '' is invalid according to its datatype 'QUALSBJCodeType' - The Enumeration constraint failed.
Schema Error	The 'QUALTYPE' element is invalid - The value '' is invalid according to its datatype 'QUALTYPECodeType' - The Enumeration constraint failed.
Schema Error	The 'QUALYEAR' element is invalid - The value '2014' is invalid according to its datatype 'YearType' - The MaxInclusive constraint failed.
Schema Error	The 'RCSTDID' element is invalid - The value '12221021' is invalid according to its datatype 'RCSTDIDType' - The Pattern constraint failed.
Schema Error	The 'SBJCA' element is invalid - The value 'G400' is invalid according to its datatype 'SBJCACodeType' - The Enumeration constraint failed.
Schema Error	The 'SBJPCNT' element is invalid - The value '000' is invalid according to its datatype 'SBJPCNTType' - The MinInclusive constraint failed.
Business Rule	Course.AWARDBOD must exist where (Course.COURSEAIM begins D, E, L, M, H, I, J or C and does not end with 99) and Course.REDUCEDC = 00, 01, 03 or 04.
Business Rule	Course.COLLOGR must exist for institutions in England where Course.REDUCEDC = 00 except where Course.COURSEAIM = D00, D01, D90, L00, L80, L90, L91.
Business Rule	Course.COURSEAIM must be coded H99 where Course.TTCID = F.
Business Rule	Course.COURSEAIM must be coded H71, M71, H11, I11 or I71 for institutions in England and Wales where Course.TTCID = 1, G or H.
Business Rule	Course.MSFUND must not be coded 01 where Course.COURSEAIM begins P, Q, R, S or X.
Business Rule	Course.SKEUNITS must exist for courses at institutions in England where Course.REDUCEDC=07 or Course.TTCID = F.
Business Rule	Course.TTCID must be coded 2 where Course.COURSEAIM = M79, H79, I79, C77, C78, P77 or P78
Business Rule	CourseSubject.SBJCA must be unique for each Course entity
Business Rule	CourseSubject.SBJCA must be coded B700, B760, B761, B790, L300, L310, L400, L410, L500, L510, L520, L530, L540, L541, L560 or L590 where Course.REGBODY = 08.
Business Rule	CourseSubject.SBJCA must be coded C900, F100, F300, G100, I200, R900, V600, W200 or W300 where Course.TTCID = F.
Business Rule	CourseSubject.SBJCA must be coded C100, C110, C600, C800, C900, D600, F100, F110, F300, F310, F390, F900, G100, H700, H900, I200, I900, J420, L230, L390, L510, L700, L900, N100, N190, N870, P300, P390, Q300, Q560, Q800, R100, R200, R300, R400, R500, R700, R900, V100, V600, W200, W210, W300, W400, W500, W900 or W990 where Course.TTCID = 1, 8, G or H and Instance.ITTPHSC = 24 - 26, 54 - 57, or 78 - 81.
Business Rule	For each Course entity the sum of CourseSubject.SBJPCNT must equal 100.
Business Rule	EntryProfile.PARED must exist for institutions in England or Scotland where EntryProfile.DOMICILE = XF, XG, XH, XI, XK, XL, GG, JE or IM and Course.COURSEAIM = M22, M26, H00, H11, H16, H18, H22, H23, I00, I11, I16, J10, J16, J20, J26, J30, C20 or C30 and Instance.COMDATE is after 31-Jul-2007 and corresponding Instance.REDUCEDI = 00 or 04.
Business Rule	EntryProfile.PGCECLSS must exist where Course.COURSEAIM = M71 or H71 and corresponding Instance.REDUCEDI = 00 or 04.
Business Rule	EntryProfile.PGCESBJ must exist where Course.COURSEAIM = M71 or H71 and corresponding Instance.REDUCEDI = 00 or 04.

Business Rule	Where exists EntryProfile.POSTCODE must contain: a valid full postcode structure or a valid outward postcode structure.
Business Rule	EntryProfile.PREVINST must exist where EntryProfile.DOMICILE = XF, XG, XH, XI, XK, XL, GG, JE or IM and Course.COURSEAIM = M22, M26, H00, H11, H16, H18, H22, H23, I00, I11, I16, J10, J16, J20, J26, J30, C20 or C30 and corresponding Instance.REDUCEDI = 00 or 04.
Business Rule	EntryProfile.QUALENT3 must exist where corresponding Instance.REDUCEDI = 00, 01, 04 or 09 and Instance.COMDATE > 2010-07-31.
Business Rule	EntryProfile.QUALENT3 must not be coded P91 where Instance.COMDATE > 2012-07-31.
Business Rule	EntryProfile.SEC must exist where EntryProfile.UCASAPPID exists and Course.COURSEAIM begins H, I, J or C or is M22, M26 and EntryProfile.DOMICILE = XF, XG, XH, XI, XK, XL, GG, JE or IM.
Business Rule	EntryProfile.SOC2000 must exist where EntryProfile.UCASAPPID exists and Course.COURSEAIM begins H, I, J or C or is M22 or M26 and EntryProfile.DOMICILE = XF, XG, XH, XI, XK, XL, GG, JE or IM.
Business Rule	EntryProfile.UCASAPPID must be four characters long when Instance.COMDATE > 2011-07-31
Business Rule	This entry must exist in Course.COURSEID.
Business Rule	Instance.DESTOCM must exist for institutions in England, Wales and Northern Ireland where Instance.REDUCEDI = 00 and (Instance.EXCHANGE = 7, B, C, D or E or Instance.LOCSDY = F, G or S).
Business Rule	Instance.DHFUND must exist for institutions in England where Course.MSFUND = 31 and Instance.REDUCEDI = 00 or 01.
Business Rule	Instance.DHFUND must not exist for institutions in England where Course.MSFUND not = 31.
Business Rule	Instance.DISALL must exist where Student.DISABLE = 02 - 96 and Instance.REDUCEDI = 00 unless institution in Wales and Course.COURSEAIM begins with P, Q, R, S or X.
Business Rule	Where exists Instance.ENDDATE must be less than Y2-08-01.
Business Rule	If Instance.MODE is not equal to 63 or 64, then Instance.ENDDATE (where exists) must be greater than Y1-07-31.
Business Rule	If Instance.MODE = 63 or 64, then Instance.ENDDATE (where exists) must be greater than (Y2-6)-07-31.
Business Rule	Instance.ENDDATE (where exists) must be greater than or equal to Instance.COMDATE (where exists) unless (Instance.MODE = 63 or 64 and Instance.ENDDATE = Y0-08-01).
Business Rule	Instance.EXCHANGE must be coded B, C, D or E when Instance.SPECFEE = 3.
Business Rule	Instance.EXCHANGE must be coded 0, 7, B, C, D, E or Y where Instance.LOCSDY = F or G.
Business Rule	Instance.FEEELIG must be coded 1 where Instance.FUNDCODE = 1 for institutions in England and Northern Ireland.
Business Rule	Instance.FEEELIG must not be coded 2 where Instance.FUNDCODE is coded 1.
Business Rule	Instance.FEEELIG must be coded 2 where (EntryProfile.DOMICILE exists and is coded IM, XL, GG or JE) and Instance.FESTUMK not coded 1 or 3.
Business Rule	For institutions in England, Instance.FEEREGIME must exist where (Course.COURSEAIM begins with H, I, J or C or is M22 or M26) and (Course.TTCID not equal to F) and (Instance.FEEELIG = 1 or 3) and (Instance.EXCHANGE = 0, 7, B, C, D, E, Y, Z or Instance.EXCHANGE does not exist) and (Instance.MODE = 01, 02, 23, 24, 25, 31, 43, 44, 52, or 53) and (Instance.REDUCEDI = 00 or 01).
Business Rule	For institutions in England, Instance.FEEREGIME must exist where (Course.COURSEAIM begins with E or M (excluding M22, M26)) and (Instance.FEEELIG = 1 or 3) and (Instance.EXCHANGE = 0, 7, B, C, D, E, Y, Z or Instance.EXCHANGE does not exist) and (Instance.MODE = 01, 02, 23, 24, 25, 31, 52, 53, 73 or 74) and (Instance.REDUCEDI = 00 or 01).
Business Rule	For institutions in England, Instance.FEEREGIME must not exist where (Course.COURSEAIM begins with D, L, P, Q, R, S or X) or (Course.TTCID = F) or (Instance.FEEELIG = 2) or (Instance.EXCHANGE = 2, 4, 8, 9 or A) or (Instance.MODE = 51).
Business Rule	Instance.FESTUMK must be coded 1 or 4 where Course.COURSEAIM begins P, Q, R, S or X.
Business Rule	Instance.FUNDCODE must not be coded 2 or 3 where Instance.LOCSDY = 9.
Business Rule	Instance.FUNDCODE must not be coded 1 where Instance.QTS = 3 and Course.TTCID = 5.
Business Rule	Instance.FUNDCODE cannot be coded 1 by institutions in England, Wales or Northern Ireland where Course.MSFUND = 13 or 31 and Course.COURSEAIM = H16, I16, M16, M86, H11, I11, H00, I00, H22, M22, M26, H23, H24 or H62.
Business Rule	For English institutions Instance.FUNDCODE code 1 must not have Course.TTCID = 1, 8, 9, D, F, G or H.
Business Rule	Instance.FUNDCOMP cannot be coded 3 where Instance.RSNEND is coded 01 - 11, 98 or 99.
Business Rule	Instance.FUNDLEV must exist for institutions in England or Northern Ireland where Instance.REDUCEDI = 00 or 01.
Business Rule	For institutions in England, Instance.FUNDLEV must not be coded 11, 21 or 31 where Instance.MODE = 23 or 24 and Instance.LOCSDY = D or E.
Business Rule	Instance.GROSSFEE must exist where Instance.FEEREGIME = 20 and Instance.SSN does not exist.
Business Rule	Instance.ITTPHSC must exist for institutions in England or Wales where Course.TTCID = 1, 2, 8, F, G or H and Instance.REDUCEDI = 00, 01, 04 or 07.

Business Rule	Instance.ITTSCHMS must exist where the institution is in England or Wales and Course.TTCID = 1, 2, G or H and Instance.REDUCEDI = 00, 01 or 04
Business Rule	Instance.LOCSDY must exist where Instance.REDUCEDI = 00, 01 or 09.
Business Rule	Instance.LOCSDY must be coded D, E or X where Instance.MODE = 23, 24 or 25.
Business Rule	Instance.LOCSDY must not be coded D, E, or F where Instance.MODE is coded 01 and the institution is in England or Wales.
Business Rule	Instance.LOCSDY must be coded F where Instance.MODE 52 or 53 and the institution is in England.
Business Rule	Instance.LOCSDY must be coded D, E, F or G where Instance.EXCHANGE is coded 7, B, C, D or E.
Business Rule	Where Instance.MCDATE is not null, it must be < Y1-08-02 for institutions in England and Northern Ireland where Course.COURSEAIM begins D, E, L or M (excluding M22, M26) and Instance.MODE = 63 or 64.
Business Rule	Where exists and is not null Instance.MCDATE must be later than Y1-07-31 unless Instance.MODE = 63 or 64.
Business Rule	Where exists and is not null Instance.MCDATE must be earlier than Y2-08-01.
Business Rule	Instance.MCDATE must not be null when Instance.MODE = 73 or 74. For further information please see the documentation in the coding manual - Further guidance on reporting Instance.MCDATE and Instance.MODE.
Business Rule	Where exists and not null Instance.MCDATE must be earlier than Instance.ENDDATE
Business Rule	Instance.MODE cannot be coded 12, 13, 14, 32, 33, 34, 35, 36, 37, 65, 66, 67, 68 or 69 where Instance.FESTUMK = 2.
Business Rule	Instance.MODE must be coded 52 or 53 where Instance.LOCSDY is coded F and the institution is in England or Scotland.
Business Rule	Instance.MODE cannot be coded 63 or 64 where Instance.COMDATE is in the current reporting period (i.e. on/after 01-Aug-Y1).
Business Rule	Instance.MODE must not be coded 01, 23 or 24 where Course.TTCID = F.
Business Rule	Instance.MODE must be coded 63 or 64 where all corresponding StudentOnModule.MODSTAT for that instance are coded 4.
Business Rule	Instance.MODE cannot be coded 01 where Instance.REDUCEDI = 01.
Business Rule	Instance.MODE cannot be coded 01 by institutions in England, Scotland or Northern Ireland where Instance.UNITLGTH = 3 and Instance.SPLENGTH = 01 to 23.
Business Rule	Instance.MSTUFEE must be coded 98 where Instance.EXCHANGE is coded 2, 8, 9 or A.
Business Rule	Instance.MSTUFEE must not be 71 where Instance.MODE is less than 40.
Business Rule	Instance.NETFEE must exist where Instance.FEEREGIME = 20 and Instance.SSN does not exist.
Business Rule	Instance.NETFEE must exist where Instance.GROSSFEE exists.
Business Rule	Instance.NOTACT must be 1 where Instance.MODE is 73 or 74
Business Rule	Where Instance.PHDSUB exists and is not null it must be earlier than Instance.ENDDATE where Instance.RSNEND = 01.
Business Rule	Instance.QTS must exist for institutions in England and Northern Ireland where Course.TTCID = 5 and Instance.REDUCEDI = 00, 01 or 04.
Business Rule	Instance.QTS must not exist for institutions in England and Northern Ireland where Course.TTCID not = 5.
Business Rule	QualificationsAwarded entity must exist where Instance.ENDDATE is not null and Instance.RSNEND = 01 and Instance.REDUCEDI = 00, 01 or 04, unless Course.COURSEAIM ends with 99.
Business Rule	RAEData entity must exist where Course.COURSEAIM = L00, L80, L90 or L99 or begins with D and corresponding Instance.REDUCEDI = 00.
Business Rule	Instance.RCSTDNT must exist where Course.COURSEAIM begins D, E, L or M (excluding M22, M26) and Instance.REDUCEDI = 00 or 04.
Business Rule	Instance.RCSTDNT must not be coded 09.
Business Rule	Instance.REDUCEDI code 01 must have Instance.STULOAD less than or equal to 010.0.
Business Rule	Instance.REDUCEDI code 03 must have Instance.EXCHANGE = 2, 4, 8, 9 or A.
Business Rule	Instance.REDUCEDI code 04 must have Instance.MODE = 63 or 64.
Business Rule	Instance.RSNEND must not exist where Instance.FUNDCOMP = 3.
Business Rule	Instance.SKEITT must exist for institutions in England where (Course.REDUCEDC=07 or Course.TTCID = F) and Course.CTITLE does not begin SKEPLUS
Business Rule	For institutions in England, Instance.SPECFEE must be coded 6 or 9 where Instance.MODE = 31 and Course.TTCID = 1, 8, G or H.
Business Rule	For institutions in England, where Instance.SPECFEE = 0, 1, 2, 3, 4, 5 or 6, Course.COURSEAIM must be coded M71, M88, M22, M26 or begin with H, I, J or C (excluding codes ending with 90, 91 or 99).
Business Rule	Where exists Instance.SPLENGTH cannot be greater than 72 where Instance.MODE = 01, 02, 23, 24 or 25 and Instance.UNITLGTH = 2.
Business Rule	Instance.SSN must not exist where (Course.COURSEAIM begins D, E, L, M (excluding M22, M26, M71, M88), P, Q, R, S or X) or where (Course.COURSEAIM ends with 90 or 99).

Business Rule	Where the institution is in England, Northern Ireland or Wales, Instance.SSN must not exist where Instance.FEELIG = 2 or 3.
Business Rule	StudentOnModule entity must exist where Instance.STULOAD is greater than 0 and Instance.REDUCEDI = 00 or 01.
Business Rule	There must be at least one occurrence of StudentOnModule entity with StudentOnModule.MODSTAT not equal to 4 where Instance.STULOAD is greater than 0 and Instance.REDUCEDI = 00 or 01.
Business Rule	Instance.STULOAD must exist where Instance.REDUCEDI = 00, 01, 03 or 09
Business Rule	Instance.STULOAD must be 0 where Instance.MODE = 63 or 64.
Business Rule	Where Instance.REDUCEDI = 00 or 01, Instance.STULOAD must not be greater than 0 where sum of Module.FTE for the student instance is 0.
Business Rule	For institutions in England, Northern Ireland and Wales, Instance.STULOAD must not be 0 where Instance.MODE = 01, 02, 23, 24, 25, 31, 43, 44, 52, 53, 73 or 74, unless Instance.LOCSDY = S or Instance.EXCHANGE is coded 2, 4, 8, 9 or A or Instance.REDUCEDI = 08.
Business Rule	For institutions in England, Instance.STULOAD must not be greater than 10.0 where Course.COURSEAIM begins D, E, L or M (excluding M22, M26) and Instance.MODE = 43 or 44 and ( Instance.MCDATE is null or is equal to Y1-08-01)
Business Rule	Instance.TYPEYR must exist where Instance.REDUCEDI = 00, 01 or 09 unless institution in Wales and Course.COURSEAIM begins with P, Q, R, S or X.
Business Rule	Instance.TYPEYR must be coded 1 where Instance.COMDATE is greater than or equal to 1 August of the reporting period and Instance.ENDDATE (if not null) is less than or equal to 31 July of the reporting period and Instance.FUNDCOMP = 1 and Instance.RSNEND = 01 or 98.
Business Rule	Instance.TYPEYR must be coded 1 where Instance.COMDATE in range 01 August - 31 December (regardless of year) and Instance.ENDDATE in range 01 January - 31 July (regardless of year) and Instance.RSNEND is coded 01 or 98.
Business Rule	Instance.YEARSTU value cannot be greater than the difference in years between 31 July of the reporting period and the 01 August before Instance.COMDATE.
Business Rule	Instance.YEARSTU must not equal 1 where Instance.TYPEYR = 1 and Instance.COMDATE < Y1-08-01 and Instance.MODE is not equal to 63, 64, 73 or 74
Business Rule	Where Student.BIRTHDTE is not null and QualificationsOnEntry.QUALTYPE not coded M6, M7, M8, 6M, 7M or 8M, QualificationsOnEntry.QUALYEAR should be greater than (Student.BIRTHDTE + 13) years.
Business Rule	Student.DISABLE must not be coded 02, 03, 04, 05, 06, 07, 10, 11, 97, 98 or 99 where any Instance.COMDATE > 2010-07-31
Business Rule	Student.ETHNIC must exist where (EntryProfile.DOMICILE exists and is coded XF, XG, XH, XI, XK, XL, GG, JE or IM) and Instance.REDUCEDI = 00, 01, 07 or 08.
Business Rule	Student.FNAMES must exist where any Instance.REDUCEDI = 00, 01, 04, 08 or 09.
Business Rule	Student.FNAMES must not exist where Student.SURNAME does not exist.
Business Rule	Student.NATION must exist for institutions in England, Wales or Scotland where any Instance.REDUCEDI = 00 or 03 and Instance.COMDATE is on or after 2007-08-01.
Business Rule	Student.NATION code XL must have Instance.COMDATE before 2007-08-01.
Business Rule	Student.SURNAME must exist where any Instance.REDUCEDI = 00, 01, 04, 08 or 09.
Business Rule	Student.TTACCOM must exist where a student has at least one instance where Instance.MODE = 01, 02, 23, 24 or 25 and Instance.REDUCEDI = 00 and Instance.LOCSDY not equal to S.
Business Rule	Where exists Student.TTPCODE must not equal EntryProfile.POSTCODE where Student.TTACCOM = 1 or 9 and Course.COURSEAIM begins with H, I, J, C, P, Q, R, S or X or is M22 or M26.
Business Rule	Where exists Student.TTPCODE must contain: a valid full postcode structure or a valid outward postcode structure.
Business Rule	Student.TTPCODE must not be null when Student.TTACCOM = 1.
Business Rule	StudentOnModule.MODID must exist on Module.MODID
Business Warning	Instance.DHFUND should not be coded 998 for institutions in England where Course.MSFUND = 31 unless CourseSubject.SBJCA begins 'L5'.
Business Warning	For institutions in England, Northern Ireland or Wales, Instance.FEEREGIME should not be coded 10 where Instance.COMDATE is later than 2012-08-31.
Business Warning	For institutions in England and Northern Ireland, Instance.FEEREGIME should not be coded 20 where Instance.COMDATE is earlier than 2012-09-01.
Business Warning	Instance.FUNDCODE should not be coded 5 or 7 where Course.MSFUND = 01 or 02.
Business Warning	Instance.FUNDCODE code 1 should not have Course.MSFUND = 07, 13 or 31.
Business Warning	Instance.FUNDCODE should not be coded 1 where Instance.FUNDLEV = 20 or 21 and (EntryProfile.QUALENT2 = 01, 02, 05, 14, 15 or EntryProfile.QUALENT3 begins with D or M (excluding M41, M44 and M71)).
Business Warning	For institutions in England, Northern Ireland and Wales, Instance.STULOAD should be less than 100 where Instance.TYPEYR is not equal to 1 and Instance.COMDATE > Y1-07-31

Business Warning	Instance.TYPEYR should not be coded 1 where Instance.FUNDCOMP = 3 unless the student is on a sandwich placement spanning a reporting year, but the normal programme of study is a standard year.
Business Warning	Instance.TYPEYR should not be coded 1 where Instance.FUNDLEV = 11, 21 or 31 and anniversary of Instance.COMDATE in academic year > 20 September and Instance.MODE = 01.
Business Warning	Instance.TYPEYR should not normally be coded 1 where Course.COURSEAIM begins D or L.
Business Warning	Where Instance.YEARPRG is not equal to 99 and Instance.UNITLGTH = 2, Instance.YEARPRG should be less than or equal to Instance.SPLENGTH divided by 12.
Business Warning	For institutions in England, where Instance.COMDATE > Y1-07-31 and EntryProfile.QVALENT3 = P50, there should be at least one occurrence of QualificationsOnEntry.QUALTYPE = A, AD, AN, A1, DA, V, V1, V2 or 9U.
Business Warning	Course.COURSEAIM should be coded D00, D01, E00, L00, M00, M01, M10, M11, M44, L80, H50, H60, M50, H80, M80, M70, L80, H70, I70, H72, I72, M72, H61, H81, I61, J20, C20, I60, I80, I81, J80, C90, H90, I90, J90, D90, E90, L90 or M90 where (Course.TTCID = 5 and Course.MSFUND = 07) or where (Course.TTCID = 5 and any Instance.FUNDCODE = 7).
Business Warning	Course.NHSBURSARY is coded 0 where all occurrences of CourseSubject have the first character of CourseSubject.SBJCA equal to A or B, or the first 2 characters of CourseSubject.SBJCA are equal to L5.
Business Warning	Instance.DISALL should not exist where Student.DISABLE = 00, 97, 98 or 99.
Business Warning	Instance.FUNDCODE should not be coded 1 by institutions in England, Wales or Northern Ireland where (EntryProfile.DOMICILE exists and is not in (XK, XL, GG, JE, IM, XF, XI, XH, XG, AT, BE, XA, CZ, DK, FI, FR, DE, GI, GR, HU, IE, IT, LU, MT, NL, PL, PT, ES, SE, ZZ, EE, LV, LT, SI, SK, RO, BG)) .
Business Warning	Instance.FUNDCODE should not be coded 1 where Instance.FUNDLEV = 10 or 11 and Course.COURSEAIM begins D, E, L, M, H or I and (EntryProfile.QVALENT2 is coded 01, 02, 05, 14, 15, 03, 04, 10, 11, 12, 13, 16 or EntryProfile.QVALENT3 begins with D, M, H or is equal to JUK)
Business Warning	Instance.FUNDLEV should not be coded 10 or 11 by institutions in England or Northern Ireland where Course.COURSEAIM begins M and is not M22 or M26.
Business Warning	Instance.FUNDLEV should be coded 20, 21 or 99 by institutions in England or Northern Ireland where Course.COURSEAIM begins E or M (excluding M22, M26) or equals H50, H60, H61, H62, H71, H78, H81, H88, I60, I61 and I81.
Business Warning	Instance.RSNEND should exist where QualificationsAwarded.QUAL exists.
Business Warning	For institutions in England, Northern Ireland and Wales, Instance.STULOAD should be less than 100 where Instance.TYPEYR is not equal to 1 and Instance.ENDDATE > Y1-07-31
Business Warning	Instance.TREFNO should exist for institutions in England or Wales where the corresponding (QualificationsAwarded.OUTCOME = 1 and QualificationsAwarded.QUAL = M71 or H71) and Course.TTCID = 1, 8, G or H and Instance.REDUCEDI = 00 or 04.
Business Warning	QualificationsOnEntry.QUALYEAR should be 2003 or later where QualificationsOnEntry.QUALTYPE is BE.
Business Warning	Where exists Student.BIRTHDTE should be greater than (Y1-70)-07-31.
Business Warning	Student.DISABLE should be coded 02-96 where Instance.DISALL exists.
Business Warning	Where exists Student.TTPCODE should not equal EntryProfile.POSTCODE where Student.TTACCOM = 8.
Business Warning	QualificationsOnEntry.QUALYEAR should be 2003 or later where QualificationsOnEntry.QUALTYPE is B.
Business Warning	If CourseSubject.SBJCA begins with B7 for institutions in England and Course.COURSEAIM ends with '16' then CourseSubject.SBJCA should be coded B720, B730, B740, B750, B760 or B761.
Business Warning	EntryProfile.UCASAPPID should be four characters long where Student.UCASPERID exists.
Business Warning	Instance.MSTUFEE should not be coded 02, 04, 52 or 54 where EntryProfile.DOMICILE exists and is coded XH.
Business Warning	Instance.PHDSUB is null where Instance.RCSTDNT is not equal to 99 and Instance.REDUCEDI = 00 or 04 and Course.COURSEAIM = D00 or D01 and Instance.MODE = 01, 02, 43, 63 or 73 and QualificationsAwarded does not exist and Instance.COMDATE is earlier than (Y2-5)-08-01. The Research Councils expect a full-time PhD student to submit their thesis within 5 years.
Business Warning	Student.TTPCODE should not be null when Student.TTACCOM = 9.
Business Warning	Student.ULN should not be the same as Student.UCASPERID
Business Warning	Student.TTACCOM should not be coded 6 where Instance.LOCSDY = X.

Business Warning	There are 2 occurrences of identical StudentOnModule.MODID for a single instance. An instance should not be linked to the same module more than once in cases where a student is simply re-sitting examinations or assessment.
Business Warning	QualificationsAwarded.QUAL should not begin H or I where Course.COURSEAIM begins J or C.
Business Warning	Instance.LOCSY should be coded D or F where Instance.SPECFEE = 2 or 3.
Business Warning	If Instance.SPECFEE = 2 or 3, then Instance.MODE should be coded 23, 52 or 53.
Business Warning	Where Instance.PHDSUB exists it should not be earlier than (Instance.COMDATE + 24 months)
Business Warning	For institutions in England, Northern Ireland and Wales, where Student.BIRTHDTE is not null and QualificationsOnEntry.QUALTYPE is not coded M6, M7, M8, 6M, 7M, 8M or SS, QualificationsOnEntry.QUALYEAR should be greater than (Student.BIRTHDTE + 15) year
Business Warning	Instance.MSTUFEE should not be coded 02, 03, 52 or 53 where (EntryProfile.DOMICILE exists and is coded XG).
Business Warning	Instance.QTS should not be coded 4 where EntryProfile.QUALENT3 is coded M71 or H71.
Business Warning	QualificationsOnEntry.QUALYEAR should be less than or equal to Instance.COMDATE year.
Business Warning	QualificationsOnEntry.QUALYEAR should be 2007 or later where QualificationsOnEntry.QUALTYPE is DA.
Business Warning	QualificationsOnEntry.QUALYEAR should be 2008 or later where QualificationsOnEntry.QUALTYPE is OC (for Certificate).
Business Warning	QualificationsOnEntry.QUALYEAR should be 2000 or later where QualificationsOnEntry.QUALTYPE is H.

## **2.0 Interview Quotes**

### **2.1.1 University X Interview 1, Thursday 29<sup>th</sup> May 2014, 3pm**

4:36 - The next HESA preparation cycle begins before the last return is submitted.

4:52 - We have an improvements list in 12/13 for 13/14, 14/15

7:35 - HESA process manual.

8:06 - HESA have been delaying the release of their validation kit, past few years going well into April.

10:56 - By April ideally you want to be into Business Rule Errors and looking at them.

11:45 - Try to submit on 1<sup>st</sup> August every year.

12:30 - You hit August and the problem with August, a lot of people are very busy and can't help you.

12:56 - Our real commit will always be around September.

13:24 - We look at our qualification on entry data in parallel throughout the year.

17:19 - We rarely go back to the department for information.

18:45 - Module maintenance is one of the biggest stresses that we've got.

18:55 - You have to say the same thing year on year to the same people.

19:11 We do introduction to HESA seminars for departments.

20:09 - Very challenging because you're asking someone to do something that isn't strictly speaking their job.

20:17 - Unfortunately for them but perhaps fortunately for the rest of us that's when London Met got hit with a huge fine, so you have London Met to hover over people's heads to say this is what happens when you get it wrong.

20:57 - Most institutions will have some people who don't care, some people who do care.

22:34 - Data process and quality team, part of Registry Services.

23:09 - Not everyone does HESA.

23:17 - Aggregate, ITT, DLHE, SLC reporting, 1<sup>st</sup> line SITS support, write reports, PTES, PRES.

27:35 - It's quite challenging.

27:43 - Because every year we hit the point where something has gone wrong.

31:29 - I don't think we've felt the need to do it (documentation) because if you just tell a person what they need to do they will be able to fix it.

32:56 - If you document it, next year it will be different.

34:48 - Sometimes a lot of interpretation is needed.

40:47 - We do a lot of pre-emptive work.

### **2.1.2 University X Interview 2, Wednesday 25<sup>th</sup> June 2014, 9.00am**

0:57 - It changes the relationships with departments.

1:33 - The problem is when you have to ask for data you don't hold.

3:27 - We're lucky in that student systems is in registry service so this happens in house.

3:35 - The director of registry services is in charge of both HESA and systems so that helps a lot.

6:10 - They have no input on the process.

6:18 - We are traditionally under staffed and its very difficult even though it is statutory and that's understood and its clear it needs to happen, its difficult to make the case for additional staff or additional resource when it happens without catastrophe.

6:33 - It does very much feel like something has to go very wrong for anyone to actually think that you need any help.

6:50 - Its also the lack of visibility, its only the end result that's visible.

7:05 - As long as its done and there are no major issues I don't think anyone's really going to look at it.

9:36 - We are pretty conservative so most of our students will start in September.

10:15 - It would be helpful. I guess everyone has found a way of dealing with that internally.

12:14 - We have good data to work with. I do think that good data is very important to a great business.

12:22 - I think there comes a time when you have to question individual requests...HESA will ask for something, then HEFCE will ask for it from a different source, the SLC will ask for it from somewhere else. That is annoying and a waste of everyone's time.

13:01 - I wouldn't say that the stress isn't justifiable.

13:06 - Sometimes the way that HESA is handled internally, I think for each institution makes it more stressful than it has to be.

13:17 - I don't think what HESA is asking for is unreasonable.

13:27 - On the whole, all the statutory reporting from institutions is as coordinated as it could be.

13:37 - I know for a fact we are duplicating information that we send to HESA that we send to SLC.

15:37 - I think we're in a position where it wouldn't be a full year full time job.

16:42 - The fact that we have don't have faculties and have to go to individual departments is a hindrance.

18:46 - If we started looking at things in April we would be in a very difficult position.

18:49 - It is very important to start working as early as possible.

21:13 - We have changed the upgrade cycle so the upgrade happens at the quietest time of year possible.

21:43 - I can certainly see why if you were doing an upgrade at the wrong time of year that would be a bad thing.

22:22 - I'd like to think our documentation is good.

22:55 - You could document it in more detail but I do find that perhaps you do get to the point where the effort perhaps would not be worth the outcome to maintain documents at that kind of level.

23:18 - I couldn't possibly do it without that in place.

25:35 - Because there is so many people involved, it's always going to be a risk.

27:26 - I do think it's very important to have good data.

27:42 - Probably HESA came first.

28:20 - HESA helped but it shouldn't be the reason for it.

29:20 - There needs to be senior management buy-in because if nobody cares up there, nobody's going to care down here.

30:28 - There needs to be senior management buy-in in order for that to filter down.

### **2.2.1 University Y Interview 1, Friday 30<sup>th</sup> May 2014, 10am**

2:21 - We've never quite finished off the year before as we start the new year.

2:39 - We will be reviewing the business rules and the schema errors and the Minerva queries with a view to trying to analyse where we had significant difficulties previously.

2:56 - We'll also have work that we'll be carrying forward from year on year on year, things that we've thought of previously that would be helpful and we never got round to doing because we ran out of time.

4:31 - Our preparation database is really a series of Access databases and queries, extraordinarily complex, built up over a period of years.

4:52 - For an institution of our size, we cannot leave it long enough, we cannot leave it until the validation kit is made available to us, we need to get working on our data quality as soon as the new data starts coming in.

5:58 - Because of internal business process changes or because of HESAs changing in reporting requirements need to be reviewed.

6:29 - There's always a lot of development work to do, we rarely leave things untouched year on year.

7:05 - Trying to disseminate and to address problems of user understanding.

8:24 - Often we cannot do that until we got our upgraded system in around Easter time.

8:41 - From Easter onwards that we go into overdrive.

9:30 - Trying to do things in an orderly manner as early as possible versus actually not wanting to overwhelm ourselves with the scale of our errors by trying to do it too early.

9:51 - It will be the availability of the software and the readiness of our data that will determine when we then try to put a file through the first time.

12:48 - Aim to do test commit usually late August.

13:51 - Managing that is always a challenge because we are always fighting what are extremely challenging timescales for getting the work done.

15:06 - The numbers of issues each year seem to keep on increasing, but within a single issue there can be very many multi-parted questions we have always found this process to be extraordinarily difficult.

15:27 - It has been made immeasurably easier again via the University developing its internal equivalent to one of the HESA outputs.

17:35 - Even with those tools its still represents a huge amount of collective effort across the University.

21:38 - I do think that it is an area where you have to develop your specialist expertise and the only way of doing that actually is to get your hands dirty.

22:07 - It's a very very difficult area for somebody new to it to actually get their heads round.

22:13 - I know that HESA have revamped their website fairly recently with new comers in mind and I think that's to be applauded as a specialist I find their website easy now but that's because I know exactly what I'm looking for, I know where to look for it etc etc. But if you do not have the background it is utterly bewildering.

22:58 - An individual member of staff has to have a certain mind-set in order to be able to get their heads round it at all.

23:12 - The business rules and the constructs are all perfectly logical but you have to have a logical brain to be able to follow it.

23:59 - It is the case that we struggle to find and retain people who can do this sort of work.

25:55 - I think all institutions must find it extraordinarily difficult.

27:13 - Our holy grail is around designing processes that will get the data right at source. However the fact of the matter is we are so busy...that our ability to re-engineer those processes successfully is severely limited and it is enormously frustrating.

28:17 - Year on year we do improve but the amount of re-engineering that we still have to do is quite depressing really.

31:51 - Engagement of those staff at board level is actually very helpful even though they might not understand the complexity and the detail and they certainly, I don't think, understand the kind of resourcing implications that are involved.

32:41 - Other than our immediate line management nobody is really interested in the process of putting in the return but everybody is very interested in what comes out.

33:08 - Where I think we're a bit vulnerable is it is taken as read that this will be managed and this will be ok.

34:25 - whilst ever things are going well, questions won't be asked.

34:37 - The only way in which a better understanding of what it takes to get it in would happen would be if there was some kind of crisis.

35:30 - In order to really hit those deadlines, we have to have a strategy whereby we are minimising the risk of not getting over the hurdle and therefore we have to jump that little bit higher.

36:56 - I think it takes us collectively too much effort to get over that hurdle.

37:12 - The consequences of failure are just horrible.

37:22 - The problem with not hitting the deadline is you're eating then into the time for the following year and we have no time in the following year so all you do is you make what is already an extraordinarily busy period last longer and under situations of even more stress and anxiety.

### **2.2.2 University Y Interview 2, Thursday 26<sup>th</sup> 2014, 3pm**

00:28 - It depends on what the change is.

00:39 - It would have a significant impact on a substantial business process.

02:38 - They have input when there are significant changes.

03:10 - The other time when there is significant involvement of what can often be very many senior managers and senior academics is if the outputs from the HESA return are not what people thought that they should be.

05:06 - Do I think that if it was better understood what a monster this is that the University would actually be more structured in some of its processes? No I don't.

06:08 - I don't think there's much benefit to us. (H validation kit, linked to upgrade)

07:39 - I think the consequences of not getting it in and not getting it right are now so great that I think the stress is probably inevitable.

08:59 - The business processes that lead up to the HESA return are so entangled in so many different areas of the University I'm not sure a one-person/fte would actually ever do it because it often entails entire areas changing.

09:33 - Only if it was done in a coordinated across way would it actually make the changes hold.

09:52 - I think the positive impact is having a virtual team centrally where over time we build up a skills and a knowledge an understanding base and I actually think that is completely critical to our success.

10:12 - If we, as a team were more devolved or more dispersed I think we would have much greater difficulty in achieving what we achieve.

10:41 - We would never get it finished on time.

11:45 - It would be easier if it were slightly earlier in the year.

12:59 - I think HESA themselves do extremely well in terms of keeping their documentation accurate.

13:56 - Now we have reached a team of a sufficient size that we can absorb it more easily. I think when we were a smaller group of people, where we had one person potentially leaving it would have had a much greater impact.

15:09 - The HESA process gives us is a possibility of having data definitions imposed upon us.

19:30 - You can always always do more.

19:44 - If we had the time and the resources then there is an awful lot more we could do.

### **2.3.1 University Z Interview 1, Friday 30<sup>th</sup> May 2014, 2pm**

The Admissions and Records department are responsible for, and "own" the student record.

ASIS upgrades are the responsibility of CLS (Computing and Library Services).

Academic elements of the record are the responsibility of schools (module/assessment data - anything hanging off SPR).

Your team comprises of 20 staff (not 20 FTE), including an assistant director, a communications team and 3 operations teams. The comms team are responsible for course records and the ops teams responsible for the students records in allocated schools. This removes potential barriers or politics surrounding data ownership and/or migration as the policy on this is well defined. We also have the ASIS Team within our area who work on developments. User support and training for SITS. ARO is part of the wider Planning and Information Services

In terms of keeping records accurate, the PVC responsible for retention is provided reports of students withdrawing/not enrolling and it is known that that information has a high level of visibility. He also is kept in the loop when we are chasing enrolment records with no progression/award data

Jamie is a data returns officer who will generate reports, either in-house excel reports, or from the HESA validation kit and dissemination when and where to as applicable.

ASIS developments in relation to HESA are done within your department.

As with other institutions you are bound by HESAs time frames, including the release of the validation kit which is later in the year than it has been in previous years.

Staff retention is more of an issue within Schools and not so much within the Admissions and Records team.

A cut-off date for a student to withdraw or suspend studies is in place to reduce the amount of changes to student record to better facilitate the HESA process.

The complexity of an institutions provision only adds to the complexity of the work needed for the HESA return. Nursing and teaching courses only have one intake.

Ongoing data quality exercises start as soon as the HESA cycle finishes in the form of data quality excel reports.

HESA validation kit is used as soon as is available or as soon as is needed.

HESA records are generated in the ASIS practice environment.

HESA course records are generated in the live environment around may. This is followed by module information probably June time

All other records generated in live around July.

With regards to test commits, commits and submission deadlines, the deadlines provided by HESA are the ones that are used.

HESA seminars/roadshows are held inform the wider staff community about the importance of HESA.

Return approximately 23000-25000 HINs.

Developments for future HESA years are continuous and run parallel to the current HESA year and are developed within the team.

### **2.3.2 University Z Interview 2, Wednesday 25<sup>th</sup> June 2014, 14.30pm**

0:46 - It's about how you collect that and where and the timescales for that so that has an impact.

2:26 - HESA do give you advance warning.

5:22 - We're quite lucky because we have a very short reporting line.

6:52 - It does help.

8:22 - For us definitely.

9:40 - Yes.

10:17 - If they released it earlier it would give us more time.

11:39 - I'm hoping this year will be less stressful because I've got more resource.

11:43 - We've done an awful lot more work upfront on some of the things we know have caused us problems before.

11:56 - It is a stressful time.

13:21 - I don't think there is an appreciation, again, at sort of maybe senior level, how stressful it actually is.

17:42 - It's all interlinked.

20:16 - We have somebody in each school who devolve responsibilities to everybody... They are expert users of the system at a local level.

23:14 - It's very important.

24:24 - We do two upgrades a year.

25:40 - Not really no.

26:09 - I think you can document some stuff, but I don't think you can document everything.

27:38 - As far as the HESA processes are concerned it's just impossible.

28:16 - It's more the fact it's the people that are responsible for actually inputting the data and their understanding.

30:29 - We need to make them aware of why this is important.

33:30 - Initial improvements because of HESA.

33:37 - The data is being used more and more within the institution for a lot more things.

## Appendix 3.0

### Coded Tables

#### 3.1.0

#### Code Definitions

Code	Name
KT	Knowledge Transfer
H	HESA
T	Technology
St	Staffing
PT	Personality Traits
Ch	Change
DQ	Data Quality
	Continuous Service
CSI	Improvement
IS	Institution Size
CvD	Centralised vs Devolved
OS	Organisational Structure
Doc	Documentation
SMT	Senior Management Team
Pr	Process
R	Resources
Str	Stress
C	Communication
E	Effort
Pre	Pre-Emptive Measures

#### 3.1.1

#### Codified Quotes from Interview Stage 2

Code	Institution X	Institution Y	Institution Z
C	18:55 - You have to say the same thing year on year to the same people.	7:05 - Trying to disseminate and to address problems of user understanding.	HESA seminars/roadshows are held inform the wider staff community about the importance of HESA.

C	19:11 We do introduction to HESA seminars for departments.		
Ch		5:58 - Because of internal business process changes or because of HESAs changing in reporting requirements need to be reviewed.	
CSI	4:52 - We have an improvements list in 12/13 for 13/14, 14/15	2:39 - We will be reviewing the business rules and the schema errors and the Minerva queries with a view to trying to analyse where we had significant difficulties previously.	ASIS developments in relation to HESA are done within your department.
CSI		6:29 - There's always a lot of development work to do, we rarely leave things untouched year on year.	Developments for future HESA years are continuous and run parallel to the current HESA year and are developed within the team.
CSI		15:27 - It has been made immeasurably easier again via the University developing its internal equivalent to one of the HESA outputs.	
CSI		27:13 - Our holy grail is around designing processes that will get the data right at source.	
CSI		28:17 - Year on year we do improve but the amount of re-engineering that we still have to do is quite depressing really.	
CvD	17:19 - We rarely go back to the department for information.		The Admissions and Records department are responsible for, and "own" the student record. Academic elements of the record are the responsibility of schools (module/assessment data - anything hanging off SPR).
Doc	31:29 - I don't think we've felt the need to do it because if you just tell a person what they need to do they will be able to fix it.	22:13 - I know that HESA have revamped their website fairly recently with new comers in mind and I think that's to be applauded as a specialist I find their website easy now but that's because I know exactly what I'm looking for, I know where to look for it etc etc. But if you do not have the background it is utterly bewildering.	
Doc	32:56 - If you document it, next year it will be different.		

Doc	34:48 - Sometimes a lot of interpretation is needed.		
DQ	13:24 - We look at our qualification on entry data in parallel throughout the year.	4:31 - Our preparation database is really a series of Access databases and queries, extraordinarily complex, built up over a period of years.	A cut off date for a student to withdraw or suspend studies is in place to reduce the amount of changes to student record to better facilitate the HESA process.
DQ	18:45 - Module maintenance is one of the biggest stresses that we've got.	15:06 - The numbers of issues each year seem to keep on increasing, but within a single issue there can be very many multi-part questions we have always found this process to be extraordinarily difficult.	Ongoing data quality exercises start as soon as the HESA cycle finishes in the form of data quality excel reports.
DQ	40:47 - We do a lot of pre-emptive work.	27:13 - Our holy grail is around designing processes that will get the data right at source.	
E	27:43 - Because every year we hit the point where something has gone wrong.	17:35 - Even with those tools its still represents a huge amount of collective effort across the University.	
E		36:56 - I think it takes us collectively too much effort to get over that hurdle.	
H	8:06 - HESA have been delaying the release of their validation kit, past few years going well into April.	4:52 - For an institution of our size, we cannot leave it long enough, we cannot leave it until the validation kit is made available to us, we need to get working on our data quality as soon as the new data starts coming in.	As with other institutions you are bound by HESA's time frames, including the release of the validation kit which is later in the year than it has been in previous years.
H		22:13 - I know that HESA have revamped their website fairly recently with new comers in mind and I think that's to be applauded as a specialist I find their website easy now but that's because I know exactly what I'm looking for, I know where to look for it etc etc. But if you do not have the background it is utterly bewildering.	HESA validation kit is used as soon as is available or as soon as is needed.
IS		4:52 - For an institution of our size, we cannot leave it long enough, we cannot leave it until the validation kit is made available to us, we need to get working on our data quality as soon as the new data starts	The complexity of an institutions provision only adds to the complexity of the work needed for the HESA return.

		coming in.	
KT	18:55 - You have to say the same thing year on year to the same people.	7:05 - Trying to disseminate and to address problems of user understanding.	HESA seminars/roadshows are held inform the wider staff community about the importance of HESA.
KT	19.11 We do introduction to HESA seminars for departments.	32:41 - Other than our immediate line management nobody is really interested in the process of putting in the return but everybody is very interested in what comes out.	
KT	20:17 - Unfortunately for them but perhaps fortunately for the rest of us that's when London Met got hit with a huge fine, so you have London Met to hover over people's heads to say this is what happens when you get it wrong.	34:37 - The only way in which a better understanding of what it takes to get it in would happen would be if there was some kind of crisis.	
OS	17:19 - We rarely go back to the department for information.		The Admissions and Records department are responsible for, and "own" the student record. Academic elements of the record are the responsibility of schools (module/assessment data - anything hanging off SPR).
OS	22:34 - Data process and quality team, part of Registry Services.		Your team comprises of 20 staff (not 20 fte), including an assistant director, a communications team and 3 operations teams. The comms team are responsible for course records and the ops teams responsible for the students records in allocated schools. This removes potential barriers or politics surrounding data ownership and/or migration as the policy on this is well defined. We also have the ASIS Team within our area who work on developments. User support and training for SITS. ARO is part of the wider Planning and Information Services
OS	23:09 - Not everyone does HESA.		
OS	23:17 - Aggregate, ITT, DLHE, SLC reporting, 1st line SITS support, write reports, PTES, PRES.		

Pr	4:36 - The next HESA preparation cycle begins before the last return is submitted.	2:21 - We've never quite finished off the year before as we start the new year.	Ongoing data quality exercises start as soon as the HESA cycle finishes in the form of data quality excel reports.
Pr	7:35 - HESA process manual.	2:56 - We'll also have work that we'll be carrying forward from year on year on year, things that we've thought of previously that would be helpful and we never got round to doing because we ran out of time.	HESA records are generated in the ASIS practice environment.
Pr	10:56 - By April ideally you want to be into Business Rule Errors and looking at them.	8:41 - From Easter onwards that we go into overdrive.	HESA course records are generated in the live environment around may. This is followed by module information probably June time
Pr	11:45 - Try to submit on 1st August every year.	9:30 - Trying to do things in an orderly manner as early as possible versus actually not wanting to overwhelm ourselves with the scale of our errors by trying to do it too early.	All other records generated in live around July.
Pr	12:56 - Our real commit will always be around September.	9:51 - It will be the availability of the software and the readiness of our data that will determine when we then try to put a file through the first time.	With regards to test commits, commits and submission deadlines, the deadlines provided by HESA are the ones that are used.
Pr	40:47 - We do a lot of pre-emptive work.	12:48 - Aim to do test commit usually late August.	A cut off date for a student to withdraw or suspend studies is in place to reduce the amount of changes to student record to better facilitate the HESA process.
Pr		13:51 - Managing that is always a challenge because we are always fighting what are extremely challenging timescales for getting the work done.	HESA validation kit is used as soon as is available or as soon as is needed.
Pr		35:30 - In order to really hit those deadlines, we have to have a strategy whereby we are minimising the risk of not getting over the hurdle and therefore we have to jump that little bit higher.	
Pr		37:22 - The problem with not hitting the deadline is you're eating then into the time for the following year and we have no time in the following year.	

Pre		4:31 - Our preparation database is really a series of Access databases and queries, extraordinarily complex, built up over a period of years.	Ongoing data quality exercises start as soon as the HESA cycle finishes in the form of data quality excel reports.
Pre		15:27 - It has been made immeasurably easier again via the University developing its internal equivalent to one of the HESA outputs.	
Pre		17:35 - Even with those tools its still represents a huge amount of collective effort across the University.	
PT	34:48 - Sometimes a lot of interpretation is needed.	4:31 - Our preparation database is really a series of Access databases and queries, extraordinarily complex, built up over a period of years.	
PT		15:27 - It has been made immeasurably easier again via the University developing its internal equivalent to one of the HESA outputs.	
PT		17:35 - Even with those tools its still represents a huge amount of collective effort across the University.	
R	12:30 - You hit August and the problem with August, a lot of people are very busy and can't help you.	21:38 - I do think that it is an area where you have to develop your specialist expertise and the only way of doing that actually is to get your hands dirty.	Data returns officer will generate reports, either in-house excel reports, or from the HESA validation kit and dissemination when and where to as applicable.
R	20:09 - Very challenging because you're asking someone to do something that isn't strictly speaking their job.	23:59 - It is the case that we struggle to find and retain people who can do this sort of work.	
R	23:09 - Not everyone does HESA.	27:15 - However the fact of the matter is we are so busy...that our ability to re-engineer those processes successfully is severely limited and it is enormously frustrating.	
R		31:51 - Engagement of those staff at board level is actually very helpful even though they might not understand the complexity and the detail and they certainly, I don't think, understand the kind of resourcing implications that are involved.	

R		33:08 - Where I think we're a bit vulnerable is it is taken as read that this will be managed and this will be ok.	
SMT		31:51 - Engagement of those staff at board level is actually very helpful even though they might not understand the complexity and the detail and they certainly, I don't think, understand the kind of resourcing implications that are involved.	In terms of keeping records accurate, the PVC responsible for retention is provided reports of students withdrawing/not enrolling and it is known that that information has a high level of visibility. He also is kept in the loop when we are chasing enrolment records with no progression/award data
SMT		32:41 - Other than our immediate line management nobody is really interested in the process of putting in the return but everybody is very interested in what comes out.	
SMT		34:25 - Whilst ever things are going well, questions won't be asked.	
St	12:30 - You hit August and the problem with August, a lot of people are very busy and can't help you.	21:38 - I do think that it is an area where you have to develop your specialist expertise and the only way of doing that actually is to get your hands dirty.	Staff retention is more of an issue within Schools and not so much within the Admissions and Records team.
St	20:17 - Unfortunately for them but perhaps fortunately for the rest of us that's when London Met got hit with a huge fine, so you have London Met to hover over people's heads to say this is what happens when you get it wrong.	22:07 - It's a very very difficult area for somebody new to it to actually get their heads round.	Jamie is a data returns officer(?) who will generate reports, either in-house excel reports, or from the HESA validation kit and dissemination when and where to as applicable.
St	20:57 - Most institutions will have some people who don't care, some people who do care.	23:59 - It is the case that we struggle to find and retain people who can do this sort of work.	
St	20:09 - Very challenging because you're asking someone to do something that isn't strictly speaking their job.		
St	27:35 - It's quite challenging.		
Str	18:45 - Module maintenance is one of the biggest stresses that we've got.	13:51 - Managing that is always a challenge because we are always fighting what are extremely challenging timescales for getting the work done.	

Str	27:43 - Because every year we hit the point where something has gone wrong.	17:35 - Even with those tools its still represents a huge amount of collective effort across the University.	
Str		25:55 - I think all institutions must find it extraordinarily difficult.	
Str		27:15 - However the fact of the matter is we are so busy...that our ability to re-engineer those processes successfully is severely limited and it is enormously frustrating.	
Str		28:17 - Year on year we do improve but the amount of re-engineering that we still have to do is quite depressing really.	
Str		36:56 - I think it takes us collectively too much effort to get over that hurdle.	
Str		37:12 - The consequences of failure are just horrible.	
Str		37:26 - You make what is already an extraordinarily busy period last longer and under situations of even more stress and anxiety.	
T	8:06 - HESA have been delaying the release of their validation kit, past few years going well into April.	8:24 - Often we cannot do that until we got our upgraded system in around Easter time.	ASIS upgrades are the responsibility of CLS (Computing and Library Services?).
T		9:51 - It will be the availability of the software and the readiness of our data that will determine when we then try to put a file through the first time.	As with other institutions you are bound by HESAs time frames, including the release of the validation kit which is later in the year than it has been in previous years.

### 3.1.2

#### Codified Quotes from Interview Stage 2

Code	Institution X	Institution Y	Institution Z
Ch	0:57 - It changes the relationships with departments.	00:28 - It depends on what the change is.	0:46 - It's about how you collect that and where and the timescales for that so that has an impact.
Ch		00:39 - It would have a significant impact on a substantial business process.	2:26 - HESA do give you advance warning.
Ch		02:38 - They have input when there are significant changes.	

CSI	15:37 - I think we're in a position where it wouldn't be a full year full time job.	08:59 - The business processes that lead up to the HESA return are so entangled in so many different areas of the University Im not sure a one-person/fte would actually ever do it because it often entails entire areas changing.	17:42 - It's all interlinked.
CSI		09:33 - Only if it was done in a coordinated across way would it actually make the changes hold.	
CvD	1:33 - The problem is when you have to ask for data you don't hold.	09:52 - I think the positive impact is having a virtual team centrally where over time we build up a skills and a knowledge an understanding base and I actually think that is completely critical to our success.	20:16 - We have somebody in each school who devolve responsibilities to everybody... They are expert users of the system at a local level.
CvD	16:42 - The fact that we have don't have faculties and have to go to individual departments is a hindrance.	10:12 - If we, as a team were more devolved or more dispersed I think we would have much greater difficulty in achieving what we achieve.	
Doc	22:22 - Id like to think our documentation is good.	12:59 - I think HESA themselves do extremely well in terms of keeping their documentation accurate.	26:09 - I think you can document some stuff, but I don't think you can document everything.
Doc	22:55 - You could document it in more detail but I do find that perhaps you do get to the point where the effort perhaps would not be worth the outcome to maintain documents at that kind of level.		27:38 - As far as the HESA processes are concerned it's just impossible.
Doc	23:18 - I couldn't possibly do it without that in place.		
DQ	12:14 - We have good data to work with. I do think that good data is very important to a great business.	15:09 - The HESA process gives us is a possibility of having data definitions imposed upon us.	33:30 - Initial improvements because of HESA.
DQ	27:26 - I do think it's very important to have good data.		33:37 - The data is being used more and more within the institution for a lot more things.
DQ	27:42 - Probably HESA came first.		
DQ	28:20 - HESA helped but it shouldn't be the reason for it.		
H	10:15 - It would be helpful. I guess everyone has found a way of dealing with that internally.	12:59 - I think HESA themselves do extremely well in terms of keeping their documentation accurate.	2:26 - HESA do give you advance warning.

H	12:22 - I think there comes a time when you have to question individual requests...HESA will ask for something, then HEFCE will ask for it from a different source, the SLC will ask for it from somewhere else. That is annoying and a waste of everyone's time.	06:08 - I don't think there's much benefit to us.	9:40 - Yes.
H	13:17 - I don't think what HESA is asking for is unreasonable.		10:17 - If they released it earlier it would give us more time.
H	13:27 - On the whole, all the statutory reporting from institutions is as coordinated as it could be.		
H	13:37 - I know for a fact we are duplicating information that we send to HESA that we send to SLC.		
H	18:46 - If we started looking at things in April we would be in a very difficult position.		
IS	9:36 - We are pretty conservative so most of our students will start in September.	05:06 - Do I think that if it was better understood what a monster this is that the University would actually be more structured in some of its processes? No I don't.	8:22 - For us definitely.
KT	29:20 - There needs to be senior management buy-in because if nobody cares up there, nobody's going to care down here.	09:52 - I think the positive impact is having a virtual team centrally where over time we build up a skills and a knowledge an understanding base and I actually think that is completely critical to our success.	28:16 - It's more the fact it's the people that are responsible for actually inputting the data and their understanding.
KT	30:28 - There needs to be senior management buy-in in order for that to filter down.	19:30 - You can always always do more.	30:29 - We need to make them aware of why this is important.
KT		19:44 - If we had the time and the resources then there is an awful lot more we could do.	
OS	3:27 - We're lucky in that student systems is in registry service so this happens in house.		
OS	3:35 - The director of registry services is in charge of both HESA and systems so that helps a lot.		

OS	16:42 - The fact that we have don't have faculties and have to go to individual departments is a hindrance.		
Pre	18:46 - If we started looking at things in April we would be in a very difficult position.	10:41 - We would never get it finished on time.	11:43 - We've done an awful lot more work upfront on some of the things we know have caused us problems before.
Pre	18:49 - It is very important to start working as early as possible.		23:14 - It's very important.
R	6:18 - We are traditionally under staffed and its very difficult even though it is statutory and that's understood and its clear it needs to happen, its difficult to make the case for additional staff or additional resource when it happens without catastrophe.	13:56 - Now we have reached a team of a sufficient size that we can absorb it more easily. I think when we were a smaller group of people, where we had one person potentially leaving it would have had a much greater impact.	
R	6:33 - It does very much feel like something has to go very wrong for anyone to actually think that you need any help.	19:44 - If we had the time and the resources then there is an awful lot more we could do.	
R	6:18 - We are traditionally under staffed and its very difficult even though it is statutory and that's understood and its clear it needs to happen, its difficult to make the case for additional staff or additional resource when it happens without catastrophe.		
SMT	6:10 - They have no input on the process.	03:10 - The other time when there is significant involvement of what can often be very many senior managers and senior academics is if the outputs from the HESA return are not what people thought that they should be.	5:22 - We're quite lucky because we have a very short reporting line. (SMT)
SMT	6:33 - It does very much feel like something has to go very wrong for anyone to actually think that you need any help.	05:06 - Do I think that if it was better understood what a monster this is that the University would actually be more structured in some of its processes? No I don't.	6:52 - It does help (visibility SMT)
SMT	6:50 - Its also the lack of visibility, its only the end result that's visible.	02:38 - They have input when there are significant changes.	8:22 - For us definitely (SMT forcing change to benefit HESA)
SMT	7:05 - As long as its done and there are no major issues I don't think anyone's really going to look at it.		13.21 - I don't think there is an appreciation, again, at sort of maybe senior level, how stressful it actually is.

St	6:18 - We are traditionally under staffed and its very difficult even though it is statutory and that's understood and its clear it needs to happen, its difficult to make the case for additional staff or additional resource when it happens without catastrohpe.	13:56 - Now we have reached a team of a sufficient size that we can absorb it more easily. I think when we were a smaller group of people, where we had one person potentially leaving it would have had a much greater impact.	28:16 - It's more the fact it's the people that are responsible for actually inputting the data and their understanding.
St	25:35 - Because there is so many people involved, it's always going to be a risk.		
Str	13:01 - I wouldn't say that the stress isn't justifiable.	07:39 - I think the consequences of not getting it in and not getting it right are now so great that I think the stress is probably inevitable.	11:39 - I'm hoping this year will be less stressful because I've got more resource.
Str	13:06 - Sometimes the way that HESA is handled internally, I think for each institution makes it more stressful than it has to be.		11:43 - We've done an awful lot more work upfront on some of the things we know have caused us problems before
Str			11:56 - It is a stressful time.
Str			13:21 - I don't think there is an appreciation, again, at sort of maybe senior level, how stressful it actually is.
T	21:13 - We have changed the upgrade cycle so the upgrade happens at the quietest time of year possible.	11:45 - It would be easier if it were slightly earlier in the year.	24:24 - We do two upgrades a year.
T	21:43 - I can certainly see why if you were doing an upgrade at the wrong time of year that would be a bad thing.		25:40 - Not really no.

## 4.0

### Original Research Proposal

*Nb. - The nature and title of the final research changed significantly following discussions with the dissertation supervisor. Names of institutions have been anonymised here so that they cannot be linked to anything in the main body of this project.*

#### Research Title

Would the delivery of the HESA student return be better served and facilitated using a Project Management Methodology?

#### Research Question and Objectives of the Research

Does delivering business processes under the framework of a Project Management (PM) methodology enhance the planning, resourcing, delivery and efficiency of conducting that business process?

The Higher Education Statistics Agency (HESA) is the official department for the collection of student data for the higher education (HE) sector in the UK. Each year all publicly funded HE institutions must submit a credible file of student data as per HESA's requirements. This is a University wide piece of work, coordinated by the Student Systems and Records team. It has a vast range of activities and tasks ranging from basic data cleansing to applying upgrades to the student record system to allow for yearly changes. At [REDACTED] the entire process usually takes around 8 months, running from March to October. This is a regulatory process and can impact on the finances a University receives and can also incur fines where targets are not met.

The aim of this piece of research is to ascertain whether the work conducted to meet the external requirements of the student HESA return would be enhanced in terms of work planning, resourcing and time management if the 8 month process was aligned to a Project Management methodology. Or, is carrying on with this as 'business as usual' (BAU) the most appropriate and beneficial approach. To reap the potential benefits, a framework would need to be devised or adopted and a way of measuring success, in terms of both project completion and in comparison to years when the work has been run as BAU. Even if the PM iron triangle of time, cost and quality was adopted, it would still be more measurement than is currently happening. We can estimate the length of time taken, but not in terms of staff hours. Thus, there is no way of knowing the cost to the University, and quality can only be measured in the final data file, not in the work, journey and processes it takes to get there.

#### Literature Review

There is an abundance of Project Management, literature and research. However, there is less specific research for a specific area, in this case the HESA return. The majority of the writing on the subject of PM focusses on benefits and, especially in the realm of IT project success. Feeney and Sult

(2013, p745) faced similar issues stating that 'most of the articles tend to focus on managing information technology-related projects'. It is to this end then that I have been unsuccessful in finding any existing literature or research specifically in relation to the HESA return. The vast project management literature and research seems to focus on Project success.

Wateridge (1998, p39) suggests that a projects success is far more reaching than just time, cost and on specification and states that there is 'limited research on this issue' and that 'there has been little attempt in the past to define the criteria for success'. This is an issue because how can one argue that a PM methodology can improve a process without knowing what to measure it against? This is something that would need to be developed.

Is it prudent then to take existing literature of PM and define what is needed and how it can aid the delivery of a project or business process.

### *Definition*

There is a difference in definitions between 'Project' and 'Project Management'. Project definitions define what the work is, where Project Management defines the how and the control by which that work is conducted. Simply put, Clarke (1999, p139) 'Project Management is merely a tool to help the process of change'. Most would argue this definition is too simplistic. According to Atkinson (1999, p337) Oisen's original definition stated that 'Project Management is the application of a collection of tools and techniques to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time-task within time, cost and quality constraints.' My issue with this definition is the 'one-time task'. We have many annual cycles of activities at SHU that are run under a Project Management methodology, such as the annual upgrade to the student record system.

Munns and Bjeirmi (1996, p81) 'A project can be considered to be the achievement of a specific objective, which involves a series of activities and tasks which consume resources, It has to be completed within a set specification, having definite start and end dates. They go on to define Project Management 'as the process of controlling the achievement of the project objectives'. There are many definitions with as many varying characteristics as there are common ones. Munns and Bjeirm's gives an encompassing definition to both projects and project management and fits in well with this area of research.

### *Framework*

As this research is looking at work to a Project Management framework, it will at some point be necessary to define what that framework should be. There are benchmarks and global standards already in existence such as PRINCE2 and DSDM, but what is important is maintaining flexibility whilst also using a framework that offers control. The following lists research where a framework has been defined. It is interesting to note that, as with the definitions of Projects/Project Management, there are as many commonalities as there are differences between them:

Burich Et al (2006) Project Visualization, Definition and Planning, Implementation and Completion or Closure.

Project Management Institute (2010): Project Initiation, Project Planning, Project Execution/Monitoring, Project Control, Project Closeout.

Massis (2010, p527) 'regular checking points to review the project' (also known as project milestones) and 'a chance to discuss lessons learned at the end of a project'.

Barba & Perrin (2010): Definition, Estimation of Work or Timeline and the Risk Management Plan.

Wamsley (2009): Initiation, Planning, Execution and Closedown.

Revels (2010): Initiate, Plan, Execute, Control/Monitor and Close.

Collating these together instantly shows the similarities and where there are gaps between people's ideas:

PROJECT TIMELINE						
Author	Project Checkpoints					Lessons Learnt
Massis						
Burich et al	Visualisation	Definition	Planning	Implementation		Completion
PMI	Initiation		Planning	Execution	Project Control	Project Closeout
Barba & Perrin	Definition		Estimation	Timeline	Risk Management	
Wamsley	Initiation		Planning	Execution		Closedown
Revels	Initiate		Plan	Execute	Control/Monitor	Close

At the [REDACTED] the HESA return follows a project framework of:

- Project Initiation Document
- Project Plan
- Project Execution
- Project Delivery
- Project Close

And supporting documentation of:

- Issue/Change Log
- Milestones
- Plan Log
- Risk Log
- Estimation Log
- Actions Log
- Stakeholder List

As you can see, most follow a project lifecycle, having a beginning, middle and an end. There seems to be a general consensus that all projects should have formal closure, something that Barba and Perrin do not have. I would also think that any element of control should be on-going throughout the project and not be its own stage of the lifecycle as per the PMI and Revels' definition. Therefore the framework to be considered for use should following something similar to the style(s) above, providing building blocks to work to, but remaining flexible as not to cause a hindrance.

### *Benefits and Success Factors*

It is a widely held view that a PM methodology is needed to achieve project success. On top of this there is a need for those who are part of a Project to engage and buy-in to working to a PM Framework. The Project Management Institute (2010) states that 'strong organization-wide commitment to project management leads to better results'. The PMI goes on to say that '90% of global senior executives ranked project management methods as either critical or somewhat important to their ability to deliver successful projects'. Though the PMI is a clear advocate of PM it does make sense that a project that had the full backing of being run under a framework by its members would be more successful than a project whose members do not value the PM methodology they are working to.

Communication is another common theme with regards to successfully completing a project. Revels (2010, p50) 'Regular communication is paramount to maintaining control over a project.' This is reinforced by Marill and Leshner (2006, p322) who hold a similar view stating that 'as much as 90% of a PM's time may be spent on communication flow' and Massis (2010, p528) corroborates this further with 'the communications component throughout the lifecycle of each project is essential to project management's ultimate success'. What I think is important to state, given the high profile that communication is given in PM, is that good communication alone will not successfully complete a project, but bad communication will successfully bring a project down.

Most PM research also includes some factors that can affect the success of a project. Feeney and Sult (2011, p754), discussed how a case study project was influenced by external factors and stated that 'this is an issue that any project could face' and 'loss of one of the project team members' was a contributing negative impact on the project in question.

To achieve project success, Demarco (2005, p12) suggests assembling the right team, using a lifecycle model, correct cost estimating, process training and project control. Demarco's definition fits well with this piece of research.

<b>Benefits of a Project</b>	<b>Negative impacts on Projects</b>	<b>Success Factors</b>
Greater Efficiencies	External Factors	On time
Progress Tracking	Loss of project team members	Meets specification(s)
Stakeholder Input	Lack of top management commitment	Quality criteria are met.
Minimise negative impact on staff/stakeholders	Low project team commitment	Stakeholder Satisfaction
Manage Expectations	Staff knowledge and Skills	Project Team Satisfaction
Improved stakeholder satisfaction	Poor communication	
Lower Costs		

What we are left with is a lack of literature that comparatively measures the differences and/or benefits between similar pieces of work where one is done as a Project under a framework and where one is not. Thus, quantifiable success criteria must be selected for this research. This leads on to the question of what is happening now in an undefined and uncontrolled way and what planning and what control measures currently exist?

## **Proposed Research Methodology and Methods**

### *Research Method*

A survey method has been selected due to the broad coverage it can provide along with providing fact based responses that can be easily analysed. The time frames survey methods work to are also of benefit. Potential issues could come from issues of biased responses, whether this is of a political and/or sensitive nature and the sample to be used, including whether or not to survey anyone outside of SHU and if so, how these could be approached/contacted.

A case study would have been an interesting approach, especially having the chance to compare and contrast a PM approach with a non PM approach, however this is considered inappropriate due to time constraints.

Action Research would have been an excellent method, however I am not in the position to instigate as I would need to be the lead on the HESA return to be able to make the decision to run it as a Project.

I will be able to provide an ethnographic overview due to my previous participation and observation during a HESA cycle.

Engineering and experimental research are not appropriate for this and were therefore not considered.

### *Research Type*

Predominantly a questionnaire will be used. This is the most reliable approach and one that could handle the potential politically sensitive nature of the questions to be asked. The questionnaire must be well designed to promote engagement and a high response level whilst also taking into account levels of bias from the respondents. The survey will include a mix of dichotomous, multiple choice and 5 point semantic differential scale questions to provide both qualitative and quantitative results. Consideration will be given to adding an 'any further comments' section.

It may have been beneficial to consider interviewing certain key members of the HESA team - this could be included in any follow up work once all responses from the survey have been received. This could have provided valuable information especially from those with knowledge of what happened when the HESA return was run as a Project in the past. However due to time constraints, issues with sampling and a heavily biased response it would seem a questionnaire approach is more favourable.

### *Data and Analysis*

The University of Reading (2001, p5) states that 'an ill-thought-out analysis process can produce incompatible outputs and many results that never get

discussed or used'. There it is important to get the right analysis of the right data. The dependent variable in this research is the work of the HESA return. The independent variable is the method by which this is conducted.

A tentative hypothesis could be: The HESA return could be conducted in less time when aligned to a PM methodology.

Questions will be asked to members of staff who have experience of HESA, PM or both. It may be necessary to have 'skip' sections of the survey for those in the sample that only have experience in one area. Data is expected to be held on a PC, most likely in spread sheet format or possibly a database for simple data manipulation. Data coding will be considered to take into account the varying types of response, dependent on the questions of the survey. Exploratory Data Analysis will be performed as part of the data cleansing stage as responses start to come in. This will highlight early and potential issues and will also give an indication if the analysis to be performed is the most appropriate. Once all responses are in, consideration must go to how representative the sample is especially when comparing those respondents that only have experience in one area (HESA or PM). However it is important to remember that comparisons of subgroups of the population are not thought to be the primary focus of the research at this stage. Qualitative data can be displayed in graphical form and then descriptive statistics can be produced where appropriate (means, medians, frequencies) at the start and quantitative data that is numerically coded will be tabulated for ease of analysis. Cross-tabulation will be used. It is important to remember that tabulation is purely descriptive and that this should not be solely relied upon. Cluster-analysis will also be a useful tool to ascertain if any similar responses come from similar groups of the sample.

An evaluation of the sample data will need to take place to ascertain the quality of it. Elements to consider will be the coverage of the population that the sample provides, measuring non-response and potential reasons for this and is there evidence of any biased responses.

From this analysis of the data will be taken further to reveal information about the questions asked from varying respondents, such as the spread of involvement on the HESA return from those surveyed or the general consensus of how stressful the work of it can be.

### **Ethics**

Any potential respondents to the questionnaire will be fully informed of the nature of this research. Anonymity will be provided where possible to prevent biased responses and protect individuals where necessary. There may be some issue when taking into account higher management responses and how they should be addressed/categorised in the analysis as it could be possible to work out who a certain resonant was for example if job titles were used. It might be that job titles are put into classes of their own (eg, stakeholder, faculty staff, faculty management, central staff, central management) to provide full anonymity. It may also be prudent to anonymise SHU as an institution throughout the research, as I have examples of other institutions and the way they run the HESA process there is likely to be little need to explicitly name

SHU. This may help alleviate any bias from senior management and would also cause no issue for anyone who may read it.

*Nb. A research ethics checklist has been completed and is available separate to this proposal.*

## **Potential Outcomes & Organisation Impact**

Different Higher Education Institutions conduct the HESA return in different ways. At [REDACTED], the [REDACTED] team, who are responsible for a range of student lifecycle activities are responsible. However, there are no dedicated staff for data management or external returns. Staff who are involved with HESA at [REDACTED] have other primary responsibilities. In comparison, at the [REDACTED], they have a specific Data & Process Quality team who are responsible for all external returns and therefore run it as a business as usual piece of work and the [REDACTED] has something similar in place. Institutions that run the HESA return as a project include the [REDACTED] and the [REDACTED].

This research could impact on the organisation/team in the following ways:

1. Highlight the need for dedicated staff or a dedicated team.
2. Suggest that a PM methodology would bring benefit.
3. Highlight that working 'as is' is the best approach.
4. Highlight that there are elements of PM methodologies already being used.
5. Further research maybe needed.

Point 1 and 2 above would require change to current practice. Point 1 would be quite a radical and organisation change, whereas point 2 would be more of a cultural change. Points 1 and 2 are independent of each other so the research could suggest that dedicated staff would bring improvements, but not necessarily under the umbrella of project management - and vice versa. Point 3 would highlight that the current process is the best and most efficient way to carry out this piece of work. However any evidence that support point 3 may highlight where improvements could be made, if any. Should point 4 be the case, then it may be beneficial to look at exactly what is occurring and whether formalising this would be a sensible move. If point 5 was raised it would leave the options of case study research, and more favourably, action research to take this forward.

To quantify this, we will need to state what is meant by the term benefits and a way to measure potential differences (or perceived differences) between what is current practice and what could be. There are many variables to consider that could be measured such as time, cost, system changes and error numbers.

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