Paul F. Johnson

# EDCPCM005 – Leadership and Organisation

*Synopsis:*

Leadership and organisation takes many different forms. In this document, we shall see how this is undertaken by examining the process of validation of a new module within an existing programme at a Higher Education establishment. A case study is presented at the end to highlight the problem of the traditional "house" organisational structure and also poor man management.

# Table of Contents

# Document Copyrights

Dilbert comics copyright belongs to Scott Adams and are used with permission for this document with the following conditions

1.  It may not be published on the internet

2.  All copyright assignments are kept on the original figures and not interfered with

3.  They may not be copied other than within the confines of this document

4.  They are only licensed for this document and may not be transposed to other documents by the author without express permission of Scott Adams or his agents.

5.  Copyright remains the property of Scott Adams

University of Salford structures used with permission and approved in the form they are presented.

The case study does not reflect the opinions of the University of Salford.

# **Introduction**

This piece will concentrate on the managerial (both personal and course) implications of the creation of a new module within the School of Music, Media and Performance at the University of Salford. The module is a year 1 module for the BSc. Computer and Video Games (CVG) programme entitled "The Mathematics and Physics of CVG" (appendix A). It is a 20 credit module (1 year) which is compulsory for all students. An optional second year module is being planned which would include three dimensional mathematics.

This report will encompass such aspects as organisational culture, the reason for change as well as managerial styles for the course. Staffing implications will also be considered.

To appreciate the nature of change, it is important to understand the managerial styles already employed within the course. It is also important to understand that the overall programme does not currently have a module leader (the previous staff member left at Christmas and has to be yet replaced).

While this is not the best scenario, a member of staff is effectively doubling up his current role and that of Programme Leader with input and back up from both the Head of School and Head of Division. He is capable of hiring part time members of staff as well as maintaining the overall quality of delivery for the course.

# Managerial styles & structures.

The organisational charts for the School down to programme level are in Appendices B1 and B2 respectively (B2 is a generic structure common to many programmes). The structure in B1 is clearly hierarchical while B2 is more of a matrix, though this may not be obvious. Appendix B3 is more interesting as it shows an overall structure for the University which shows more of a pyramid on top of a role culture style "house"[1].

One of the key aspects currently running through programmes not only at HE level, but also at FE level, is that of common modules. These modules have great benefits in terms of staffing and accommodation of students. If (*say*) a Media Technology module and an animation module both require a lecture series on two dimensional vector mathematics, then it is possible to timetable both classes at once. This results in only one lecturer being required. This has a large cost implication in that a member of staff does not have to teach the same material twice and so can be used elsewhere (or be involved on some research). It also costs less in terms of accommodation.

This "pick and mix" approach increases flexibility of teaching, but also leads to a requirement for more specialised staffing which may not be currently available within the school. Man management is of great importance here.

Given the lack of staffing within the school (appendices B2 shows gaps within the structure), micro-management would not be an option, however, peer review by other staff

(who may not be qualified in the area being taught in, but who can be used as part of a reflection exercise) is a possibility with additional feedback supplied by students at the end of each semester.

It is fairly easy to see that the overall school structure is hierarchical, the school and programme structures are more of a flattened structure where unless there is a problem, the highest level of management which needs to be considered is the programme leader, so at most there is only one person (other than the lecturer) before the programme leader. This has a large benefit in that the both the span of control and line of communication is very short and problems can usually be identified quickly.

In terms of a span of control, the following occurs (Fig. 1)

| Head of | Head of | Prog. | Module | Lecturer |
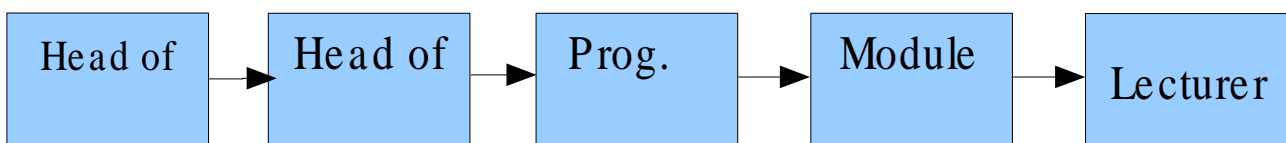
Fig 1. Span of control within the School of Music, Media and Performance

Each School has around 7 programmes, each with both a module leader and programme leader. The module leader is responsible for the staffing of the module they are leader for. The module leaders are then accountable to the programme leader, who in turn is accountable to the Head of School. Should there be any problems with the modules themselves, it is up to the programme leader to sort them out. This structure conforms not only to Urwick[2], but also to Brech[3] for both the numbers a manager should supervise

and also the number of interrelated supervisory subordinates.

Given the nature of the establishment, it is clear to see that this is very much a product structure; everything is geared and aimed to the learner coming out with a qualification at the end of their time

However, with this form of structure leads to a problem in the role of the manager. With such a short chain of command from module leader to course, can any of the standard definitions[4] be applied?

Traditionally, managers were seen to be commanding (very autocratic and a style which did not motivate those under the manager to work). Many people though have come to see this as not always being the best way to manage, with a more common approach to have more of a team aspect, which in turn has it's own problems (see Table 1)[5].

Tannebaum & Schmidt (1973) devised a continuum of leadership behaviour (*Fig. 2*) which more clearly demonstrates the findings in (table 1) and leads to a clearer definition on what a manager is (to me) within the programme I teach on.

Boss Centred ◄———————————————► Subordinate Centred

Use of authority
by manager

Area of freedom
by subordinates

| MGR makes & announces decision | MGR "sells" decision | MGR presents ideas & invites questions | MGR presents tentative decision subject to change | MGR presents problem, gets suggestions, makes decision | MGT defines limits; asks group for decision | MGR permits subordinates to function within superior defined limits |

*Fig 2. Continuum of Leadership Behaviour, Tannebaum & Schmidt (1973)*

| Managerial Style | Advantages | Disadvantages |
|---|---|---|
| Commanding | The composition of the team doesn't matter as everyone has a specified job or role. The chain of command is clearly defined. It is often the fastest way to achieve a short-term goal. The manager is often seen as being "off limits" and may not contribute to the effort. | It doesn't inspire a team spirit or the sharing of information which may make a better product. People don't like being "bossed" around. When over used, is demotivational. |
| Team / Hands on | The overall objective is detailed and the team starts. The manager is able to see (and understand) the processes behind and is able to contribute any knowledge they may have. The ability to work as both a team and individually is encouraged. Works well for medium and long term projects | As this is a team, should a member of the team leave (or be off ill), it can hold up the finalisation of the product (effectively, a link missing in a chain). By not having a person at the "head", the line of command may become blurred. |
| Hands off (Laissez Faire) | The project is outlined (not with specificity) and the manager leaves everything to the team, this allows for a lot of creativity and an overall higher quality final product. Strengthens the team. | The aims and objectives may not be clear and diversion from the original product is probable. This lack of aim and objective can be demotivational. Often time frames and goals are missed. The manager loses respect as it seems as they don't have the knowledge required for their role. Has a high risk of failure. |

Table 1: Types of managerial style, advantages and disadvantages

To me, management of a course within the overall division is seen like this:

- The overall style is advisory. Academics are encouraged to seek advice from other members of the team as well as any technical considerations from appropriate staff.

- The chain of command is very clear though. While I teach on the CVG programme as a sole lecturer in Technology (or the forthcoming Maths modules), I know that I am answerable to both the divisional board as well as the programme leader (or in the absence of that position, the head of division).

- While the whole ethos and aim of a university is very much a product one, failure is accepted on academic grounds as some students are not able to understand the material despite best efforts made.

In other words, on the Tannebaum and Schmidt scale, management is considered to be closer to the subordinate-centred side than the boss centred side. This works within a university as while there is an acknowledged degree of ability within any degree programme for the student, the gap between the top and bottom is far less than lower down the education chain. It is also accepted that students who are at university want to be there, so the overall atmosphere is much different to anywhere else.

The question is though if this Laissez Faire approach can be used for a new module?

To answer that, it is important to consider the process behind the creation of the new module.

# **Analysis of management**

## 1. During the creation of the new module

The creation of a new module is an insular affair and typically, the rational for change is not upper management (and by that I mean anything past Programme Leader from *Fig. 1*) and quite frequently, it is lecturer driven. It is up to the individual lecturer to do the research, the viability studies, the proforma to have the course it is part of altered to accommodate the new module and finally presentation to the relevant divisional board for approval or rejection. While management is available for consultation on the new modules, it is more usual to approach a Module or Programme Leader who may provide guidance.

This leads to a single problem : time management.

In the current lecturer timetable model, there is time set aside for research and administration for existing courses (which includes new and existing intake students plus course development). There is very little (if any) time allowed for new modules to be written. While it may be argued that a new module is classed as course development, in terms of the model, it isn't. Therefore any development for new modules has to be at the expense of research, administration or during the likes of breaks.

This is not the case if you are designing a whole new programme, in which case programme development time is included in the workload average.

It is fair to say that for the initial part of module creation, the style is autocratic, but

development spans the whole continuum of behaviour with the person writing the module being cast as both "management" and also the "subordinate". The question though that has to be asked is can this really be seen as management?

To me, management requires at least two people; the one who does the work and the one who manages. The manager has experience in the project being undertaken and also knows how to best manage the time of the subordinate to achieve an outcome in a reasonable period of time. It is not an autocratic relationship but more towards the mid-right of the continuum.

Contrary to the above though is the point that as a member of a team, I am constantly taking decisions which may have an effect on other members, thereby making myself a manager-by-proxy; the decision has no "management" approval, but for it to work, others have to follow and abide by that decision. As an example of this and in the case of my module, if it is approved then the decision has to be taken as to who delivers the course. Should the school "buy in" an external lecturer (which has cost implications as well as so-called "unseen" problems – Fig 3 gives an idea of one of them) or use someone from within the school who may not has as deep a knowledge as the bought in lecturer, but does have the ability to deliver what is required?

*Fig 3. A humorous look at one of the problems of temporary staff - there is little recognition or inclusive feeling*

Prior to the second stage, the module has to be translated into "University Speak" and written up on official approval documentation. Iterations of the work prior to this writing up may have been read by a number of people (proof reading, requests for comments and even a cost-time analysis for it's viability), but once it is on the submission documentation, it is then classed as an official school proposal which requires senior level decisions.

## 2. During the approval process

During the approval status, the documentation is peer reviewed by everyone involved in both the delivery and the management of the programme the module is a part of and the review takes place at the same time (normally during a divisional board meeting). During this time, the proposer is questioned by other members of the team and unless there is a group approval, the proposal is rejected. At this stage, everyone reading the documentation is a boss who is critically analysing the work and the proposer is the worker, however (and this is an interesting twist), the proposer is having to "sell" the decisions made for the new module specification to the panel.

Rejection can be for the smallest of matters (such as spelling, over-printing a title, exceeding the box bounds and not signing off each section), but this should save time in the long run.

What makes this part of the process the most interesting (from a leadership and management point of view) is not so much in terms of the material presented, but more in the man management which has been displayed in achieving the proposal.

It is not unusual for a new module, from proposal to acceptance by the divisional board, to take upto a year to write with a full course taking upto 2 years for a BSc. (or BA) and 18 months for an MSc. If the module has been created and approved in less time than that, it demonstrates two aspects to management

1. That I am a capable time manager and am able to self-achieve goals and aims and yet still maintain my level of other lecturer activity.

2. That I don't have enough work (or conversely, that the timetable model should be altered)

These contradict each other and send out mixed messages, but there is a purpose to these messages; if modules can still be created despite obstacles being placed in my way, then I am a far better administrator and therefore deserving of promotion. It seems odd to me that promotion should not be on the basis of achievement, but on administrative ability. This does not seem right, but it is currently the way to progress (*Fig 4* gives a slanted view on this).
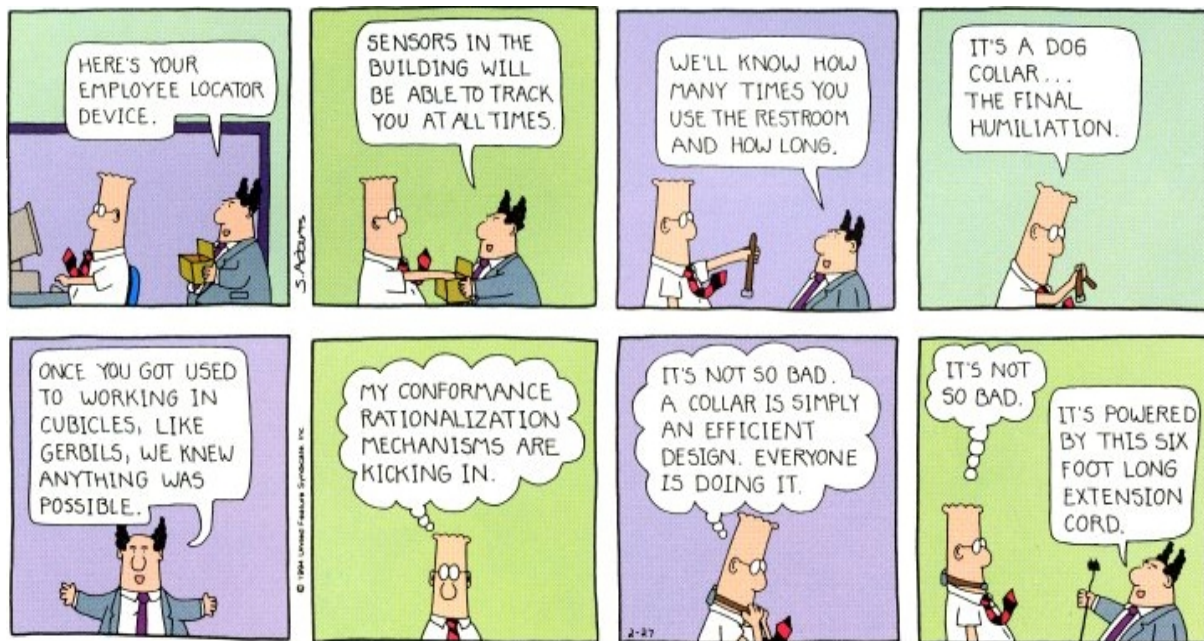
*Fig 4. Despite an approach not being correct, it is accepted through use.*

Assuming that the module has been accepted, both the level of management (in terms of where the manager is on the Universities organisational chart) and amount of management alters. Whereas before having the module accepted by the divisional board could be seen as very much self-centred management, past the head of school, the degree of freedom given becomes far less. The is necessary due to past Faculty level, the module has to be approved by the Teaching and Learning panel before being placed in front of senior management for final approval. There are very strict regulations which have to be followed past Faculty level. The chain of command also alters from Programme Leaders and Divisional heads to be Senior Management to Head of School to lecturer concerned. The management aspect though does not come from senior level, but is "converted" into a managed process at Head of School level. Typically, the Head of School

is asked a very specific question. If the Head of School can answer the question, the lecturer is not involved. If the question cannot be answered, then the Head of School asks the lecturer concerned. However, what the Head of School asks is more likely to not only fulfil the original question, but also give supporting information. This is then a set task and though it may be open for interpretation, this is not usual. Once completed, the points are sent back to the senior manager who requested the point.

## 3. Post approval process

Assuming the new module has been accepted, the management structure is once again altered as at this stage the course delivery has to be considered in terms of the lecturer for delivery and also if the module will be picked from the matrix structure from other modules and if it is picked, if only parts can be taken to support certain lectures.

This is left to the Programme Leader (under authority from the Head of Division) and while it is usual for the lecturer who wrote the module to teach it, this does not always occur (existing teaching commitments, timetable conflicts or being unavailable due to other reasons) and so another lecturer has to be approached. Once the lecturer has been allocated, the Programme Leader then organises room bookings, timetable and then sends out a module specification for other members of the School to utilise.

# **Findings and recommendations**

## i. Style and Form of management

The style and form of management and control could only be employed within a University.

It can be needlessly over complex (*Fig 5*).



*Fig 5. Approval is not this bad – although it may feel like it at times!*

If it was to be tried in FE or any other industry whereby they had to react to change or be able to implement a new course for an outside vendor, it would fail as it would be wholly unacceptable to have a lead time of upto 12 months for a single module. While it is true therefore that Universities are slow to develop courses, due to the massive variety of courses and modules available, it should be possible to dip into the structural matrix to develop and deliver just about any course – which is the case.

The "hands off" approach for module development is not one which can be recommended. While it is accepted that at HE level the amount of knowledge and ability to work independently should be higher than at any other level in the education field, the lack of support for new lecturers does not help; it can be very demoralising for staff who have

never developed a course before to have done so much work and be told at Divisional level that it would never be accepted for any number of reasons, trivial or not. As all staff are encouraged to develop not only completely new programmes and degree courses but additional modules, there should be some form of mentored management to ensure that until they are competent at the process of producing a new module (or course), the member of staff writing the module should not be left alone.

Empowerment without boundaries can be counter productive. While it may seem that allowing free reign saves time for upper levels of management, it can be seen that actually it doesn't.

Take the post approval process. By having to go between senior management committees which do not sit frequently and academic staff who are engaged in lecturing activities, time is wasted. If the member of staff was to sit on the senior management committee during the approval process, then the to and fro would be removed and approval given speedily. While this could be countered by the claim that by using the current process of going through the Head of School that not only the Head of School knows intimately what is going on, but also gives supporting evidence to the senior management, this does not hold water for the following reasons.

1. The Head of School should have been involved to some degree in not only the planning but also the advisory stage. This is more a comment on not the style of management, but in the way management is handled.

2. The process of pre-approval should have spotted any short comings in the documentation prior to release.

3. Senior management needs to be less aloof from the planning and approval stage. While it would not be a good use of their time for them to be involved in the microscopic detail, it would be of use for them to be alert to the developments in progress.

## ii. Process and Design

The process of designing and implementing a module and application to the Tannebaum and Schmidt continuum appears to be all or nothing; either everything is at the autocratic end or all at the Laissez Faire end with very little anywhere else.

## iii. Organisation & Staffing

Organisationally, change is coped with by use of part time members of staff instead of employing full time members of staff who are capable of working across a number of disciplines. Use of part timers has very little impact in the overall organisational structure as they are not part of the academic organisation. The use of part timers is also over used within the school; this leads to a number of problems for the students. The most notable is that unless the part time member of staff is drawn from the technical staff, is being able to contact the staff concerned. Typically, a part time member of staff will arrive, present their lecture and go – there is very little responsibility shown by the part-timer as they are being

used in more of a consultative scenario than a traditional lecturer role. It is a frequent complaint (when I have spoken to students) that part time members of staff also have very little loyalty to the University and often won't respond outside of their contracted hours as they are no paid to whereas full time members of staff will. Obviously, this has the potential to cause problems and ill-feeling. Turn over of part time staff is rapid (which also gives very little continuity for either the department or the students).

This is a factor which requires rapid action. The School of Music, Media and Performance is the largest in the University of Salford with a higher student – staff ratio than anywhere within the University, it is also the best funded.

Local management recognise the need for more full time members of staff, however new University regulations require that new members of staff already have an active research portfolio (and also that new members of staff either have a PGCE or are willing to enrol on the course for a fast-track certification). This is a major barrier to employing new members of staff as despite some areas not having much active research (such as in the Performance & Catering divisions), the University wide rule does not change to accommodate for such divisions. The School concerned may consider a candidate as being ideal for a position, but the University will veto any such offer without the research criteria being met.

## iv. Culture

Despite changes in external cultures, there are two over-riding cultures evident within the University; role and person which will give rise of observable conflicts as they are at either end of the cultural spectrum.

A role culture is very static; everyone within that culture knows where they belong, are governed by rules, statutes and regulations with a clear line of command. As long as the culture is not altered too greatly, this will remain strong. Universities though are not static and by the nature of funding (research funding accounted for an average of 35% of University wide funding in 2004 with 40% for 2005[6]) require a continuing and varied range of research.

By the very nature of research, this is very much a person culture. If the School housing the research is not providing adequate facilities, the researcher can and will move to another University with a poor report within research circles being made (see Appendix C for a brief case study). This poor report will influence other researchers not to fill the void and the pillar of the role culture becomes weakened.

This leads to an interesting thought on the nature of the pillars in the role culture. In 1984, the BBC broadcast a drama called Threads[7] which details the run up to and after effects of a nuclear war on the UK. At the very beginning of the show, the narrator's voice said the following:

"*In an urban society, everything connects. Each person's needs are fed by the skills of many others. Our lives are woven together in a fabric, but the connections that make society strong also make it vulnerable.*"

This can be equally applied to Universities. If one of the pillars (Schools) becomes too weak, it will collapse and thereby weaken other pillars.

# **Conclusions**

There are many causes and concerns regarding both the style and performance of management, the culture and method of producing a new module, but due to the overriding culture of an institution of HE, it would be difficult to alter these without substantial and substansive alterations to the style and working of a University.

It would though be possible to alter the style of local management as following:

1.  Unless staff have been trained in the design and submission of a new module or course, then they should be assigned a mentor who will not only guide them though the process, but set achievable goals for progression.

2.  There should be some other form of internal verification to ensure that all proposals are as full and complete as possible prior to submission to Faculty and higher echelons of the University structure.

3.  Support (both academic and technical) should be supplied in-house with the number of external part-time members of staff kept to a minimum. While this will conflict with the need for research already on-going, all non-academic staff who wish to teach should be encouraged to be part of a research group (time allowing) thereby increasing the chances of promotion.

There would be a cost implication of these recommendations and conclusions, however the increased revenue through research would benefit in the long run.

# Appendix A – Preliminary Submission for Maths and Physics in CVG module

Maths for CVG Students

Version 1.0

Paul F. Johnson

## Introduction & Rationale

It often goes unrecognised at exactly how much mathematics goes into games programming and design. Students often neglect both the physics and mathematical principles behind many simple games. Some do this as they are unsure of what is required, some because they know the game engine will look after much of what they need to do.

Over the past couple of years, games companies are more often than not asking for people coming in to have a grasp of the maths (and physics) behind games. Perhaps not

to demonstrate it on paper, but certainly for when applying (or writing) routines for projectiles.

By us not providing for this need explicitly, we are not providing the student with the tools they require.

One aspect the recent CVG review showed was that we were weak in a number of areas, programming, while it is good (and getting better) was one such area. By integrating the maths with the 1$^{st}$ year programming aspect (with development in the 2$^{nd}$ year to encompass 3D maths), not only do we add value to the programming component, but we are also giving the student the background knowledge required by industry.

From investigation, no other university has a maths element (where they have a programme comparable with ours – some do where they have a heavy programming aspect). This will be a chance to regain the ground already lost.

## **Offshoots**

There is nothing to stop the same course being given jointly to the Animation degree

course (though it would need some aspects to be altered to reflect the course differences).

## **Teaching and Assessment**

I would recommend a single three hour session during Year 1 with the same in year 2. The

session would include both programming (or demonstrations on how to code the maths) as

well as traditional taught material.

Year 2 is an optional module which should be taken by the programmers.

Assessment (Yr. 1) would comprise of two written tests (this may be best under

examination conditions) and two programming assignments. It would be one assignment

and one test per academic semester.

Second year assessment would be purely practical (one assignment per semester).

The class would be 12 sessions in length per semester (both years).

All teaching can be performed in-house without needing any specialised personnel from Physics. This would be an MMP module.

## The programme

The following can be covered over the first year. There is a lot of work, but it should be achievable.

1. Basic Concepts (Newton's Laws of Motion, Units and Measures, Coordinate System, Vectors etc.)

2. Kinematics (Velocity and Acceleration, 2D and 3D Particle Kinematics, Rigid Body Kinematics etc.)

3. Force (Force Fields, Friction, Fluid Dynamic Drag, Buoyancy, Springs and Dampers etc.)

4. Kinetics (Particle Kinetics in 2D and 3D, Rigid Body Kinetics)

5. Collisions (Impulse-Momentum Principle, Impact, Linear and Angular Impulse and Friction)

6. Projectiles (Simple Trajectories, Drag, Magnus Effect, Variable Mass)

7. Aircraft (Geometry, Lift and Drag, Other Forces, Control and Modelling)

8. Ships (Flotation, Volume, Resistance, Virtual Mass)

9. Hovercraft (How they Work, Resistance)

10. Cars (Resistance, Power, Stopping Distance, Roadway Banking)

11. Real-Time Simulations (Integrating the Equations of Motion, Euler's Method, Other Methods)

12. 2D Rigid Body Simulator (Model, Integration, Flight Controls and Rendering)

13. Implementing Collision Response (Linear Collision Response, Angular Effects)

14. Rigid Body Rotation (Rotation Matrices, Quaternions)

15. Particle Systems (Model, Integration, Collision Response and Tuning)

Second year material would include

1. 3D Rigid Body Simulator (Model, Integration, Flight Controls, Rendering)

2. Multiple Bodies in 3D (Model, Integration, Collision Response and Tuning)

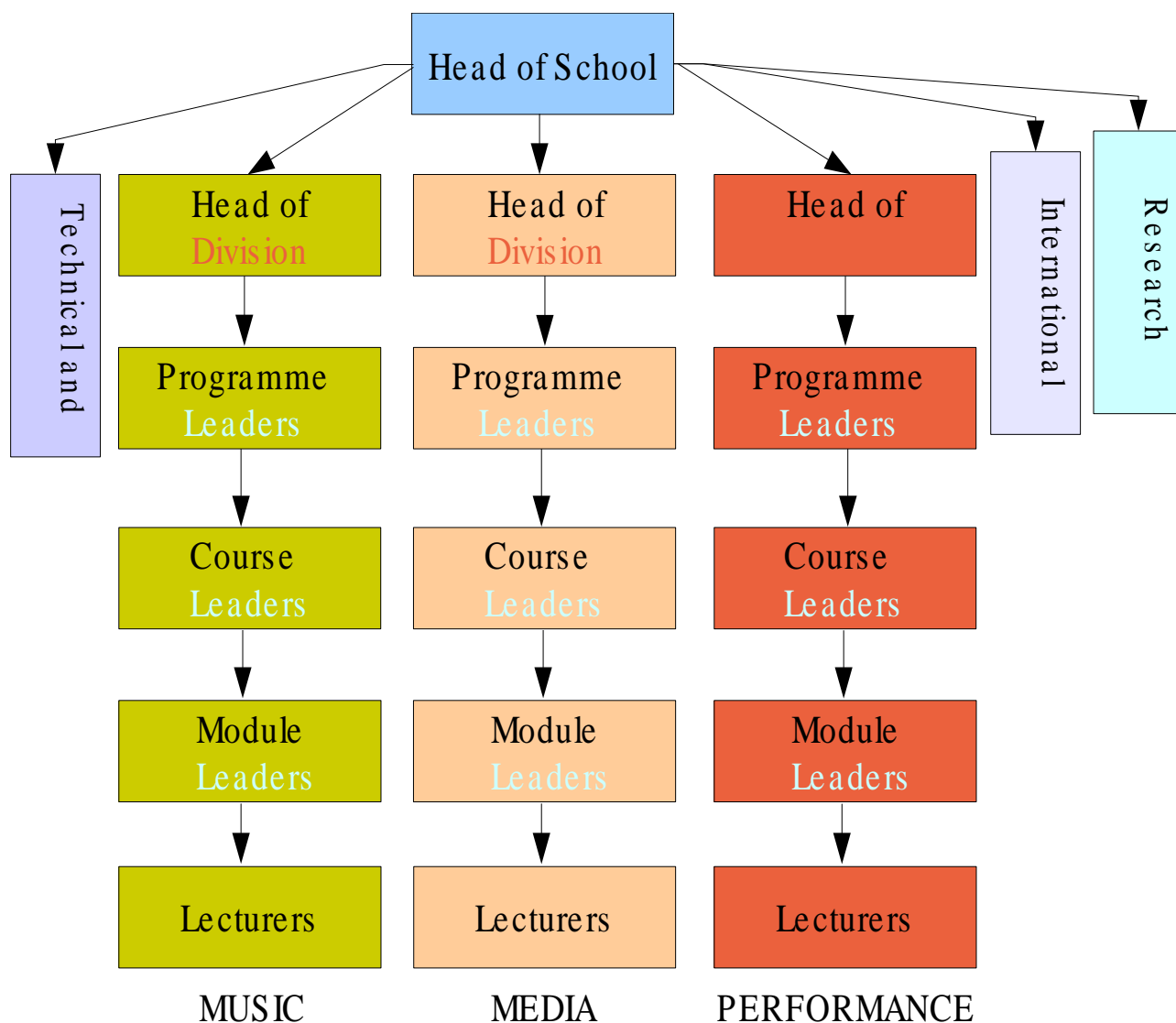3. 3D Vector maths

4. Vector Operations

5. Matrices, Probability and Chance

6. Quaternion Operations

# Appendix B1 – Organisational chart for School of Music, Media and Performance, University of Salford (*as of April 2005*)

```
                        ┌─────────────────┐
                        │  Head of School │
                        └─────────────────┘

┌───────┐   ┌──────────┐  ┌──────────┐  ┌──────────┐         ┌───────────┐ ┌──────────┐
│Technical│  │ Head of  │  │ Head of  │  │ Head of  │         │International│ │ Research │
│  and   │   │ Division │  │ Division │  │          │         │           │ │          │
└───────┘   └──────────┘  └──────────┘  └──────────┘         └───────────┘ └──────────┘

            ┌──────────┐  ┌──────────┐  ┌──────────┐
            │Programme │  │Programme │  │Programme │
            │ Leaders  │  │ Leaders  │  │ Leaders  │
            └──────────┘  └──────────┘  └──────────┘

            ┌──────────┐  ┌──────────┐  ┌──────────┐
            │  Course  │  │  Course  │  │  Course  │
            │ Leaders  │  │ Leaders  │  │ Leaders  │
            └──────────┘  └──────────┘  └──────────┘

            ┌──────────┐  ┌──────────┐  ┌──────────┐
            │  Module  │  │  Module  │  │  Module  │
            │ Leaders  │  │ Leaders  │  │ Leaders  │
            └──────────┘  └──────────┘  └──────────┘

            ┌──────────┐  ┌──────────┐  ┌──────────┐
            │ Lecturers│  │ Lecturers│  │ Lecturers│
            └──────────┘  └──────────┘  └──────────┘

              MUSIC         MEDIA      PERFORMANCE
```

# Appendix B2 – Organisational Chart – Subject level (*as of Jan 2005*) - Media

Walt Denning is currently Head of School and therefore is on restricted teaching hours.

Chris Lee is on an academic sabbatical and is therefore unable to teach

Todd Gantzler left Christmas 2004 and is yet to be replaced. His role is currently being undertaken by Matt Bell.

"Technology" relates to CVG Technology and not Media Technology.

Part time members of staff are not listed.

# Appendix B3 – Organisational Chart – University of

# Salford (*as of April 2005*)

# Appendix C – A brief case study

As described in the main body of this piece, by the constant erosion of one of the pillars supporting a structure, it is possible to not only destroy the pillar, but ensure that there is little chance of it re-appearing again. It should also be noted that this study is based on personal experience.

## i. The historical perspective

Irrespective of the research rating of a university, the teaching of any science is very expensive; it has been referred to as a "blackhole for money" jokingly for many years as it makes little difference how much money is ploughed into the subject, there is little chance of the school returning break-even or a profit. For many years, this was accepted as the norm; especially in Physics and Chemistry.

In 1982, Higher Education had it's funding drastically reduced and in 1989 the HE Reform Act allowed for the former Polytechnics to become fully fledged universities.

With this increase in the number of HE establishments, the pressure on the old universities to cut costs to compete meant a reduction in a large number of courses. The sciences did not suffer too much, though former "red brick" universities did begin to close down departments. A second factor which produced closures of science departments was a biting recession in the 1980s. When money was abundant, companies would sponsor research groups heavily and the parent university would skim their slice off that

sponsorship. When the recession bit deeply, companies withdrew sponsorship. In order to maintain the overall school, the research group would be subsumed into another group or (as was more often the case) the group leader would move to the sponsoring company and the students would go elsewhere to groups similar to the one they had been in.

## ii. Changes in education

In the late 1980s, education reforms at secondary level came in with the formation of GCSEs and later, NVQs and GNVQs. While this did not seem to cause many problems, at this level it was realised that there was a significant problem with the sciences and more over, in the examination results attained by students. It was felt that instead of the traditional three sciences, that an integrated science course would be of benefit. The results from this integrated course were very pleasing with a very high pass rate.

The problem came at the A level stage. Even with GCE 'O' level, there was a significant transition from the lower to higher grade. However, the student had the benefit of a two year course in the specific subject before progressing. With the advent of the single course, both Physics and Chemistry suffered (Chemistry suffered most). This was down to approximately 12 weeks of a 2 course being given to Physics with 8 weeks of Chemistry (the rest being Biology). The standard and methodology of assessment had not changed for A level which also placed students at a disadvantage.

Due to this, fewer students continued to A level Chemistry. Universities did not realise this

until around the mid-1990s when the full effect had filtered through and average first year numbers dropped from 60 to 15 in the 6 years from 1996 at Salford. Even larger former Polytechnics (such as Liverpool John Moores University) had to merge Chemistry classes to become Chemistry and Pharmacology courses in order to maintain sufficient numbers to justify running the courses.

## iii. Research ratings

Most teaching universities aim for a research income of around 40 – 50% (I'm excluding the likes of Oxford, Cambridge and Keele in this income figure). This income is obtained by a Research Assessment Exercise (RAE) which takes place every four years. It works by the school concerned submitting all of the research proposals currently in place and being processed between the last and current RAE as well as the number of successful completions at both MSc and PhD levels. DPhil degrees are also taken into account. The numbers are crunched and a rating is given. The ratings go from 1 to 5* (1 being the lowest). Typically, former Polytechnics have a rating of 1 to 2. As with grade 2 degrees, there is a similar split for those with an RAE rating of 3. There is a 3A and 3B rating (3B being the higher of the two). The higher the research rating, the more chance there is of being awarded research grants and therefore, the larger share of the funding pie the HE establishment receives for that subject (it is entirely possible for a university to have a school with an RAE rating of 1 in one subject and 5* in another).

Over the past couple of RAEs the value of the rating has moved. Whereas in the 1998 assessment remaining on a 3B rating would ensure a continued funding level which had been enjoyed in 1994, in 2002 a grade 4 was required for the funding to remain static from a 3B in 1998. This was in part due to other non-universities being able to apply for funding and carry out research (it is not uncommon for FE college staff application forms to include a section on "current research") and so the amount of money available is reduced.

## iv. Chemistry at the University of Salford

During the 1960s to 1970s, the University had the largest Chemistry department in Europe and the third largest in the world (based on staff, staff student ratios and student numbers). When the funding cuts were announced in 1982, Salford suffered due to not having a representative on the funding application council. It was also at about that time that many members of staff were approaching retirement age and so the number of staff was reduced and not replaced.

From 1982 to 1992, the average intake dropped again from around 210 to 100 with another drop of around 40 by 1996. With fewer members of staff, the research rating dropped from a 5 to 3. This had three effects

1. It became more difficult to recruit new staff due to the lower rating,

2. As there was fewer members of staff, the number of students which could be taught was reduced,

3.  Due to lower numbers coming through from the degree programme, there was a subsequent drop in the number of research positions open.

This is usually classed as the beginnings of a death spiral as each one will contribute to an RAE rating which does not promote the growth of a department.

A number of strategies were employed by both the University (who though they had a hidden agenda to close Chemistry since around 1998 still saw the benefit in terms of prestige to have a Chemistry department) and the school. These included

- Voluntary early retirements / redundancies and suspension of recruiting new staff

- Spending closure periods

- Tighter financial controls

- More active recruitment through the school liaison section of the University

Despite all of these measures, the number of students carried on dropping and with the retirement of certain staff, courses such as the MSc Analytical Chemistry taught programme (which had an international standing and was comprised mostly of overseas students) had to be dropped.

Offers from other universities and industry came in and other members of staff left to pursue their research at other establishments (a perfect example of the person culture in action.)

The Universities school liaison team were largely ineffectual (based on direct recruitments) and were dropped. In the 2001 intake, the entry requirements to enter a BSc. Hons

Chemistry programme had dropped from 22 points to 14 during clearing. In order to maintain class numbers, students not adequately qualified were being taken on.

By the start of the 2000 academic year, staffing levels were at such a level that classes could not be covered if any member of academic staff was ill and with the mounting levels of stress caused by the situation, being ill was becoming more frequent amongst staff.

In an attempt to avert the closure of the school, a new Materials division was created from Chemistry and Physics which led to the Organic Chemistry section leaving (with it's knock on effect of the RAE. One of the rules is that the research of the academic follows them to their new establishment and so whatever they would have contributed was lost). The proposal was for the 2002 to be a joint Materials one. It was envisaged that the joint proposal would be capable of bringing in funding at grade 4 level.

Based on the proposal, the recruitment of new staff was allowed and 4 new members of academic staff and one member of technical staff was taken on (although 3 of the academics would be on a fixed term contract dependent on if the Cancer Research unit drew in enough sponsorship and other external funding).

## v. The 2002 RAE

The result of the 2002 was that the Materials section was a grade 4. This meant funding was about the same as the 1998 RAE. Had just Chemistry or Physics submitted by themselves, the projection was that Chemistry would have a grade 2 with Physics marginally above that on a 3A.

This should not have caused a problem. However, it transpired that someone in higher management had been informed that it was quite probable that the Materials submission would gain a 5 rating. When this did not materialise, the University set about closing the school of Chemistry.

## vi. The closure of Chemistry

Based on a projected intake of 9 for the 2002 – 2003 academic year and the attainment of the grade 4, the University set about closing Chemistry. Again, this was through voluntary redundancies, early retirement or redeployment. That was not of any great issue as it seemed to many that this had been happening every year since 1998 and most were already numbed to this situation.

What made this especially bad (from a managerial point of view) was the callousness and back biting methods employed.

- Staff were offered redeployment, it was accepted and then revoked

- New staff were given their statutory termination of contract notice

- A vicious rumour mill was in action fed mainly from Chinese whispers

- Actual substansive news was hard to come by – even the head of the school was not fully informed

- Factor plans for redundancies were drawn up without union representation and against union agreements

- Students were fed a constant stream of half truths by friends in other schools

- Staff were further demoralised when news of the closure was "leaked" to other universities (I personally had a call from a tutor at another university the morning the news was announced to say he was sorry for the situation).

- Redeployment within the University was made to look easy, but actually wasn't due to the Personnel sections not keeping in contact with staff. It was also never made clear that re-training would be given (should it be required). This commitment to re-training was also not informed to the recipient schools.

These measures had a negative effect on staff morale and on staff health. From the time of announcing the closure of the department to the end of that academic year (around 4 months) staff illness rose by over 30%. The university never acknowledged that it's behaviour was a contributing factor to this rise and never accepted any long term sickness problems was related to the closure.

This wasn't just a closure with the possibility of reopening when economic factors transpire in favour of reopening, this was a destruction. Staff within the school could not trust management and this message was clear on the research forums. Unless a member of

staff was new with little or no research, they should avoid Salford like the plague.

An entire pillar from the University structure was removed, leaving the Physics and Biology sections not as well supported as they once were.

A round of school and faculty mergers occurred with Biology being taken out of the School of Sciences (Biology departments do not normally have recruitment problems). Staff left within the former school of Chemistry were moved to the new Materials section or Biology (the former Organic Chemistry section). Technical staff were left in limbo dependent on student numbers.

The treatment of the 5 new members of staff taken on in 2001 was decried by both Amicus and Salford AUT in local and national press. Due to the pressure from the unions, the redundancy notice was quietly removed. The university later denied there was any real intent to make anyone redundant, but it was a "statutory obligation" to do it.

## vii. Epilogue

Of all of the staff at the start of the 2002 academic year, only 2 remain in the Materials section from the original 6 and it is not yet certain if those taken into Biology will continue to be there much longer as the extension to the Cancer Research is due for review and the prognosis is not too good. Two members of technical staff (from 4) remain and their contracts are not due to be renewed after June.

The School of Chemistry and Applied Chemistry officially closes after the 2005 graduation.

viii.Confidentiality.

This case study is an accurate account of the build up and actual removal of a structure within a UK university. It is not for wider dissemination other than in this document.