designing organisational process - value alignment

This case study comes from my time working as Associate Dean within the School of Computing at Staffordshire University and concerns the teaching allocation for the "Stafford Computing" part of the school.

the context

The school had about 100 academic staff and 5 associate deans. About 20 of the staff were mathematicians under the headship of one associate dean. Another associate dean ran the part of the school at the Stoke campus with about 25 staff (computing and mathematics). At the Stafford campus were about 60 computing lecturers.

In the past the 60 Stafford Computing staff were divided into 3 divisions of about 20 each. Each division had a head and managed its own staff allocation, that is the allocation of particular staff to particular teaching duties. The Stafford Computing as a whole ran somewhere between 250 and 300 undergraduate and postgraduate modules and different divisions were responsible for particular modules and for allocating staff to them. Although there was some movement of staff between divisions this was the exception and managed informally between the person responsible for teaching allocation in each division.

When I joined this was just after two of the division heads had retired and the decision had been made to reorganise Stafford Computing. The divisions had been abolished and instead there were 10 groups of varying sizes (from 4 to 9) based around teaching and research subject areas (e.g. AI, graphics and imaging, HCI). Each group had a group head and Stafford Computing as a whole was made the joint responsibility of three Associate Deans of which I was one, with no clear demarcation of roles (!).

the problem – teaching allocation

For months the issue of teaching allocation kept being raised as something we knew we needed to do. We discussed potential strategies and none seemed to work ... and the decision kept being put off to later meetings.

There were several problems/issues:

(i) group heads had the authority, with minimal checks, to create new modules in their areas to fit as additional options within the degree schemes. There was no clear way of making the costs of those choices feed back to the groups, so there was some advantage in producing module that the group would enjoy teaching even if they were bad economically in terms of expected number of students.

Note that the authority to create new modules was not allied to a responsibility to service them economically – control and cost were separated.

(ii) There was a constant problem in finding staff for 'bread and butter' modules such as first year programming. These were nominally under the auspices of one or other group, but clearly the load of these should be borne across Stafford Computing as a whole.

(iii) In the past division allocation had involved 20 staff and under 100 modules, which were manageable numbers. However, now there was a need to allocate to 60 staff with nearly 300 modules, a substantially more complex task.

(iv) We wanted to leave groups and group heads with as much autonomy as possible. Including the ability to produce load sharing within the group that did not correspond to a central formula.

(v) In addition many staff were suspicious of 'the management' and were liable to distrust any process that was not completely transparent.

The process of indecision persisted until it became closer and closer to the deadline when the university required detailed timetables in order to manage room allocation. The School timetabler needed the teaching allocation, and this we could not decide.

In the end I volunteered to attempt the task.

the solution – a free market

As 'new boy on the block' I certainly did not have the knowledge or experience to do this as a task personally. However, simply saying to the 10 group heads 'manage this between you' was equally problematic.

Instead I proposed a free market style of process.

For each member of staff there was a notional available teaching hours based on contract hours and other research and administrative roles. This had been previously agreed between the associate deans, staff and group heads.

Each module was given a value depending on the number of students taking the module and weighted slightly for different levels. The bread and butter modules were given a separate 'currency'.

Given the number of available staff hours and the total 'value' of modules each hour was given an appropriate 'value' that would make the total teaching add up right.

Finally, the groups had a 'bank account' (with two currencies: 'bread and butter' or normal) where the modules requiring teaching were a credit and the staff hours available were a debit. The group heads then had the task of making their bank account balance against each type of currency. They got credit of one of their staff taught on another group's module, and debited if another group's staff taught on their module.

All the above was done with real staff and real modules, so was clearer in practice than it sounds in theory!

The system was described in a meeting of group heads who accepted it after some clarification, but with no objections. Largely because they could see it was open and fair.

I then left it to the group heads to allocate staff for their modules negotiating with each other where necessary and then tell the timetabler their decisions.

the result

The process ran itself.

The group heads told the timetabler who was doing what and every few days the timetabler would run a report form his timetabling database which showed how each individual and each group was loaded.

Only twice was I asked to help resolve a problem.

In one case a group head was finding it hard to staff a particular module. I looked at the report from the timetabler and saw that three groups appeared to have 'spare' staff capacity. I emailed the relevant group heads asking them to sort it between them ... and they did. The only other time I had to talk one-to-one with a few heads to find staffing.

For 300 modules 2 minor problems, and the timetabler got the required information to the university in time – a success by any standards.

the reasons

So why did it work?

Largely through value alignment.

The system had the property that if each group acted according to its own values then the overall organisational values were met.

Of course, the fact that the process was very transparent and made sense to the group heads was also important.

A crucial part of this was making control and cost – authority and responsibility – come together. If a group chose to create new modules then they only got their 'credit' the students who actually took those modules. It was in their interests to create 'economic' modules. However, if they felt that a particular topic was important to them, they could still create 'uneconomic' modules, but at their own cost.

Note also that the groups retained their autonomy. I did not demand that each staff member taught their nominal hours, only that the group as a whole balanced. This allowed, for example, for a group to give a member a lighter teaching load to free them for more research or staff development. Examining the reports from the timetabling system it was evident that the groups did take advantage of this flexibility.

Because the process was devolved no one had the task of trying to understand the relationships between 60 staff and 300 modules, instead each group head needed to only consider their own staff, their own modules and the explicit links with other groups.

Alan Dix, 23/8/2002