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BEST PRACTICE

IMPLEMENTATION

The purpose of this section is to outline a simple method of implementation which can be used by a company with no past experience of this work.

The steps are -

1. Create an implementation schedule which contains deliveries of hardware and software, making sure that external activities (eg deliveries) and internal activities (eg training) are covered.
2. Make sure you have an estimate of how long each task will take and make **adequate** allowance for internal staff continuing with current duties where that is necessary. Check the schedule to make sure that dependant tasks can be completed before the next task is due to begin. Effect planning means effective control, ineffective planning means ineffective control. Be sure to include all levels of training, from factor floor to Director level, and pay particular attention to users who have no computer experience. Make sure that internal staff availability matches that of the software house and do not forget to take into account holiday periods. If possible, plan into the schedule small wins. People and teams react positively when they are successful and so it is helpful to place into the schedule achievable goals which are measurable.
3. Implement the system logically.
4. Monitor the installation by comparison of plans against achievements reporting regularly to the management of both company and supplier.

Agreeing the Implementation Schedule

The objectives of the schedule should be as follows:-

- to provide a practical and realistic instrument to control effectively the implementation of the system.

- to provide a basis to assess the impact, interdependencies and critical paths of co-ordinating external activities, eg the delivery of hardware and software, with internal activities, eg staff training and education.
- to identify areas of conflict between activity schedules so that corrective action can be taken.
- to identify the impact of changes to the schedule which may take place during the implementation process.

For the sake of good business operation it is essential that an overall schedule should be agreed between your company and the system supplier. You would not invest in capital equipment without a firm intention of getting it running as soon as possible to maximise return on capital employed, nor should you look on the investment in new systems any differently. If this is the first system you are installing, the chosen system supplier should have far more experience of installing systems than your company. Bear in mind that many software salesmen have no participation in the implementation process and the staff you now meet from your supplier may be completely new to you. In addition do not be surprised if the man days for both implementation and training suddenly escalate. This can happen if the salesman has increased his chance of securing a sale by under-quoting the time applied by his own installation staff. However, he will not be aware of the constraints and workload on your present staff. Within your DOR you will have asked that training time is specified separately from the hardware and software costs. This will allow you to look critically at the time span of the supplier's staff across the availability of your own staff.

Be aware that, in any well run company, there is little enough spare staff time in the day to get along with the normal run of business. The task of installing a new system is often burdensome and every effort should be made to choose installation at a slack time in the business year. Unfortunately there are few pan-business systems which can be installed within tightly defined periods to suit business cycles.

Do not make the mistake of thinking that this extra work can be allocated to temporary staff imported for the job. It is important that knowledgeable staff are closely involved in the early stages of installation. Mistakes made at the early stage can carry forward into other documents and create problems much later in the project. Temporary staff may be better inducted to maintain the old system whilst the permanent staff, given their ability and willingness to become keyboard competent, turn their attention to understanding the new system.

This factor represents one of the most important aspects in defining a schedule. In the light of past experience it is the factor by which the implementation in target time stands or falls. This aspect is highlighted in the section below on Pitfalls.

An example of a simplistic implementation schedule is shown on the next page.

Each component job of the implementation should be listed and an estimate made of the time required to complete it. If internal staff are expected to carry out their normal

routine jobs **as well as** learn and set up the new system then the calendar time should be used. This aspect is probably **the** major cause of schedules falling awry.

By definition, estimates are not necessarily accurate. In addition reality dictates that events will take place which affect your schedule. Since the purpose of the schedule is to maintain control over the implementation process it is inevitable that the schedule will need to be updated regularly. A schedule can be produced quite simply on a spreadsheet system for a small program installation. More sophisticated programs may be applied when a multiplicity of staff resources and suppliers are involved in a larger project in which there will inevitably be more dependency conflicts. A system, which can appraise those conflicts with every change, is much more important in such cases. As accuracy is not always possible, sophistication must be balanced with cost and time. The schedule provides the basis by which your staff and your supplier are co-ordinated into an effective team.

Without the overview which a schedule provides, management will not be able to focus on the interaction and interference caused by one phase upon another.

In a small company the schedule may be one single line if no more than one member of staff is available at any one time to work with the supplier's trainer. If the cost of the project is low such a situation may be acceptable. In high cost projects or a larger company it is much more likely for several staff to be applied to different sections of the project. Thereby, the sections can be pursued in parallel and it will be important to ensure that the initial parts of a database are installed in the correct order. For example, the Accounts section will include the names and addresses of suppliers and customers. It is essential that these data and relevant accounts are installed before orders can be handled for supplies of raw materials and deliveries to customers.

All matters relating to the training and installation are of key importance to a successful implementation. You should explore with your supplier what degree of elasticity you can both provide with respect to staff turnover from both parties point of view. You may have staff leave at a crucial point in the installation and so may your supplier. Providing staff to install systems is a costly item and if one party cannot keep pace with the other there is scope for acrimonious argument.

The Information Flow Diagram.

This is the means by which your information flow is linked to the new system. On the assumption that your company or consultant has analysed your old system for the information flow it will provide a mapping of documents in use and show clearly where initial information comes from and how at what stages it is used as input by the system. It also provides an opportunity to simplify the original system which might release some staff time for making a start on the implementation of the new system. If the new system

modifies the old one considerably, the new system should also be mapped in the same way.

Pitfalls in Creating an Implementation Schedule

The most common pitfalls when creating an implementation plan are described below.

1. Important data missing from the plan

Many factors have to be considered when creating an accurate and effective implementation schedule. If one important piece of information is missing then the plan may be rendered ineffective.

2. Use of inaccurate data

We have stated that accuracy may be impossible and yet now accuse inaccurate data as a cause of error. This is a fact of life in scheduling this type of work. One source of inaccurate data is the IT Vendor. It is understandable for a vendor to under-quote the implementation man days as a means of reducing the apparent overall costs of his system. In any event they cannot anticipate the availability of your own staff nor your determination to ensure their application to the task in hand. Beyond that, much depends upon the detail you are prepared to specify in advance of the purchase so that any quotation includes all the elements of screen design and program changes. Unless this is done completely there will be unknown costs which the supplier cannot specify or cover. If the system is a standard package and you are prepared to accept it as it stands then this aspect recedes into the background. Such acceptance is rare in any program more complex than a standard desk-top package. Company systems are designed to move with the times as different situations arrive and it is almost inevitable that modifications will be necessary.

3. Use of non-dedicated staff.

This heading does not imply that staff are not likely to apply themselves to the task in hand, but it relates to the ability of management to ensure their staff are not interrupted in the training and installation process. It is important that the system is not left in the hands of temporary staff. The training must be focussed upon the permanent staff in the company for the sake of retaining in-house know-how and the development of changing systems. It is often assumed that older staff cannot rise to the challenge of keyboard work but many of them have longer experience of handling repetitive jobs that require concentration. They can also attack the task with an ingrained knowledge of the nuances of company practices, correcting data if it does not conform to the required format. Such variations are not recognisable to temporary staff imported for the job of loading database information.

Small companies are particularly vulnerable to the dedication problem in that they do not have the business volume to carry high overheads of superfluous staff. Therefore, it is common practice for the Accounts staff to be trained first on the basis of the argument that their work should diminish in clerical duties as the computer takes on the normal work with less manual interaction. Thereafter they will be free to help load the other aspects of the business. It would be all very well if the status quo maintained but business cycles vary, the accounts staff are faced with fluctuating workloads and the facility offered by the system will soon have management asking for service from it. Additionally the supplier will have the workload of his own staff to balance according to demand for his product, his type of customer and the package quality. On both sides of the fence, staff may be ill, leave, or very necessarily, take holidays. Only the last can be scheduled with any accuracy.
Thus time estimates extend, rarely diminish and plans must be changed.

4. The theoretical approach

The plan should fulfil the practical functions described above. This can be hindered if a theoretical function is pursued in favour of practical considerations.
The KIS principle should be used - it stands for "**K**eep **I**t **S**imple." This principle has been used effectively to help control complex activity relationships and is used by large companies to help control internal projects.
One of the main functions of the plan is to identify areas of conflict between interrelated schedules. The identification of these conflicts can be hindered if the presentation of the plan is overly complex. It is far better to adopt a simple approach wherever possible for ease of maintenance and presentation purposes.

5. Failure to identify dependencies.

The plan should be formulated on the basis of a logical sequence of activities where all the necessary dependencies are taken into account.

Actual System Implementation

1. Preparation

Before implementing any part of the new system make sure you have performed the following tasks where appropriate:-

- Computer familiarisation training for first time users.
- Any technical training involved for your staff to operate the new hardware/software.
- Set in motion any coding of products prior to loading onto the new system. This can be time consuming so you will also need to monitor the progress made in any recoding. Also check that the coding is correct, an error here could lead to significant reloading later.

2. Training and the learning process.

Computerisation allows rapid recall and up-to-date data to be swiftly analysed but the company must build up its in-house ability to operate the system with ease and swiftness. To have an effective system is only one part of the equation. The training and procedure used in operating must also be effective if the company is to realise the benefits of its investment. As a result, it is imperative that training is thoroughly reinforced. The practices required to become registered as ISO 9000 manufacturers are well worth consideration even if certification remains in the distant future.

It is also important for management themselves to gain a keen understanding of the system even if they are not directly involved. Without this knowledge management may not be aware of the full business potential of any new system, ie does it enable the company to operate in new markets etc.

Thorough documentation is paramount if only for the sake of combating staff turnover and absence. Full documentation will normally be available with the system from the appropriate supplier but you should make sure that any software modifications and new software you are ordering is also well documented.

Monitoring the Implementation.

Monitor the rate of progress of the implementation by referring to and updating the schedule. As the new system is installed, the areas covered by it on the schedule can be marked with a coloured highlighter and shows senior management quite clearly which sections have been completed.

At the end of each visit by the supplier's trainer/Project Manager, you or your IT manager/System supervisor should write a brief summary report detailing the work completed and the bugs uncovered. The summary should be agreed by both parties, reported to top management, and action taken by the appropriate parties. These records will be invaluable in the event of difficulties at a later stage.

Where the schedule looks like falling behind intentions, the Project Manager and the IT Manager should discuss and agree steps to be taken to catch up or accept the slower progress with due reports being made to senior management who should have the final say if extra resources are necessary.

During the implementation phase software and hardware deliveries have to be continuously co-ordinated, training at all levels must be progressed and checked for effectiveness and the procedures to use the new system must be monitored and if necessary refined.

When implementing the system, problems will occur. These frequently consist of:-

- Problems with the software. This comes primarily from new software but can also include faults in packaged software. Be sure that you have set up a procedure with the software supplier which covers the prompt reporting of any fault back to the supplier, and identification of a date by which the fault can be fixed. You will need this date if the fault causes serious problems with implementation. Check the schedule to see if any impact on the schedule results and adjust the schedule accordingly. Then the procedure should identify if the supply of the fix to the fault is delivered on time. You will need to know if your supplier is late on supplying software fixes as this can build up into serious delays to the project.
- Under allocation of internal resource. This can be a particular problem if internal staff are heavily involved in the training of other members of staff, implementation and still trying to carry out their normal duties. Adequate resource with the right knowledge can and will causes problems in meeting the schedule.
- Commitment from the supplier. This can arise via several causes which include:

  Overload and/or under resourcing within the software supplier. The software supplier may be trying to deal with too many customers with too few people.

  The system has been oversold. This can arise if the salesman was over zealous when making the sale.

  Implementation no longer profitable to the supplier. This can arise for two main reasons. Firstly the price negotiated may have been too low and secondly because implementation problems have been larger than expected and has wiped out the profit margin.

  In cases where problems are experienced with supplier commitment you have two basic options, one is to progress with the implementation as best you can and the other is to raise it directly with the supplier. The latter option is normally preferable since it may be necessary to modify the contract, particularly in cases where the system has been oversold

Software Testing

When you have installed a piece of software, you should test it using the following stages:

- Preliminary testing against dummy data to check software options work
- Test again using live data
- Test using parallel running against normal procedures and compare results. The alternative to this stage is the “big bang” approach where you go live before testing via a parallel run. The parallel run takes longer and uses more of your resource but involves less risk to the company if any fault still exists in the software.

Pitfalls in Monitoring the Schedule.

From all the above comments it is obvious that virtually every implementation plan created will need modifying due to changes in circumstance. As these changes occur new conflicts may arise and so the principles governing the creation of a schedule also apply to its upkeep. A particular danger is the assumption that because a conflict did not arise under one version of the schedule it will not arise when a change occurs. Even small changes to schedule can sometimes have unexpected effects.

A complex schedule can often take too long to maintain as a result of which modifications are left undone. The effect of actual changes is overlooked and anticipated target dates are left far behind. In the face of day-today business the project can become of lesser importance and it languishes for lack of management energy and control. Small companies are particularly vulnerable to this situation and it would be wrong to under-estimate the importance of this aspect.

It is essential therefore, that customer and supplier maintain close working relationships at all levels throughout the installation period to ensure that each is aware of the other's progress. A well formulated contract, an agreed implementation plan appropriately monitored, with updates through regular weekly reports and good communication will minimise the delays which are nearly inevitable from the first aspirations.

Completion

When all the software has been installed and is being used, perform a final check with users on the effectiveness of the training received and procedures being used. This should be done to make sure that no gaps have occurred when operating the system across all the departments in the project.