Joined Up Thinking -
Integrating information across the enterprise

sage

Executive Summary

Faced with mounting global competition, companies are having to improve how they coordinate activity across the company in order to maximise the value they deliver to customers and minimise costs. In turn, this is requiring them to integrate previously discrete departmental information systems in order to enable such collaborative working.

Whether a company should achieve this by linking together existing departmental systems or implementing a single integrated suite of applications across the business will largely depend upon its particular situation. The one thing for sure is that the common approach of attempting to share information across a business by having staff key the same data into multiple applications is generally a perilous way of sourcing the data on which key business decisions will subsequently be made.

Introduction

The following paper begins by examining the strategic drivers that are forcing companies to reconsider how they manage their activities and the implications this has for the design of their information systems.

It then considers each of the options a company has for sharing information across the enterprise to enable more collaborative working including separately entering data into multiple applications, linking existing departmental systems together and implementing a single integrated suite of applications across the business.

It then concludes that the appropriate choice for a company will generally depend on its particular situation but that simply having staff key the same data into multiple systems is a very ill-advised means of providing critical management intelligence.

The Strategic Case for Joined Up Thinking

Traditionally organisations have sought to manage themselves by dividing their operations into discrete departments or ‘silos’ focused on particular areas of related activity. Thus there may be different silos for the management of different brands, silos for different management functions (e.g. manufacturing, distribution, finance, account management) and so on. Each silo is then charged with achieving its own set of objectives which then form the basis of the planning and management of activity within that part of the business.

This approach has great benefits. By managing similar areas of activity together in this way a company can achieve economies of scale and scope that serve to decrease unit costs and support profitability. However, it is also increasingly insufficient as a means of dealing with the harsh realities of the modern business environment.

In most industries, companies can no longer achieve sustainable competitive differentiation simply on the basis of the performance characteristics of their products alone. The pace of technological development now means that today’s product innovation is likely to be quickly copied and become a standard feature tomorrow. Coupled with this, globalisation is increasingly exposing companies of all sizes to unprecedented levels of low cost competition.

As a result companies are increasingly being forced to look at how they can increase the value they provide by tailoring their offer to customers' individual needs whether that is through customising the company's core product or adapting a range of supporting services (e.g. billing, shipping, customer support etc). Such an approach not only serves to provide a basis for short term differentiation, it also has longer term strategic benefits too.

The more a company learns about a customer's needs and tailors its offer accordingly, the greater the value it will provide to the customer. Correspondingly, the greater the value the company provides, the more important it becomes to the customer. Increasingly the customer is faced with the prospect of significant disruption if they were to switch suppliers owing to the time it would take any other company to acquire the same understanding of their needs and deliver a comparable tailored service.

In effect, even though there may be other companies providing a comparable core product, such a strategy enables a company to develop a strong relationship with its customers and an enduring hold over the revenue they generate. In business-to-business markets, it is not unusual for such an approach to lead to a company effectively becoming an integral part of their client's operations to the extent that only a major quality failure is likely to threaten the continuation of the relationship.

However, implementing such a strategy has fundamental implications for how a business operates. The value a customer receives from a company arises from across its operations with different parts of the organisation meeting their assorted different needs. Thus a customer may have different needs across a company's product portfolio, specific requirements for billing and shipping, needs for particular supporting services and so on. Consequently, if a company is to focus on delivering solutions customised to the individual needs of particular customers, it needs to coordinate activity across the company to ensure their various needs are met.

The Need for Integrated Information Systems

For different parts of a company to work collaboratively in this way, they clearly need to be able to share information with each other so that they can coordinate their activity accordingly. However, the nature of company information systems can often constitute a major obstacle to achieving this.

One of the legacies of the organisation of a business into functional silos is that each part of the business has typically developed its own information systems to administer the planning and management of its own particular activities. With such applications having been developed independently and using different proprietary software, systems developed for one part of the business are unlikely to be able to "talk" to those developed separately by other departments. Quite simply one departmental system may just not be able to read the data in the applications used in another.

Options for Application Integration

Faced with this situation, a company has a number of options for ensuring information is shared across the organisation to enable effort to be coordinated effectively. Which

particular approach will be the most appropriate for a given company will typically depend upon its own particular situation.

Swivel Chair Integration

All too often companies attempt to transfer data from one departmental system to another simply by having staff enter the same information into multiple systems – sometimes called 'cut and paste integration'. Whilst it has the apparent attraction of being technically straightforward, this course is typically ill-advised. As a recent YouGov study found, not only do staff find such an approach demoralising and feel it to be a waste of their time, constantly re-keying information inevitably leads to errors seeping into the data involved. As a result, critical management decisions quickly end up being based on inaccurate information leading to costly mistakes that dwarf any savings the company might have thought it was making by going for the apparently "cheaper" option.

One step up from this is an approach that is sometimes referred to as 'spreadsheet jockeying'. Information is extracted from departmental systems in spreadsheets which are then used to inform management decision making. However, the information in such spreadsheets soon becomes out of date. As a result this approach again quickly leads to poor quality decisions being made.

As well as the sheer time and duplicated effort involved in these approaches, the ease with which errors can leak into the data concerned make them a perilous means of sourcing the information upon which to base key business decisions.

Building Bridges Between Departmental Systems

A more viable way of making data available across a company's assorted departmental systems is to build links between the various applications involved. In the past building such bridges was expensive and difficult, usually requiring the extensive use of outside consultants. However, this approach is now becoming easier and less costly as integration can increasingly make use of standard techniques and interfaces. Companies choosing this route essentially have two options.

At the most basic level, file swapping or direct electronic data interchange (EDI) links can be used to move data from one application to another. However, this can be slow and expensive as well as ill-suited to the interdependent system links needed to support complex cross-functional business processes. In addition, if one of the systems at either end of a link is changed, the interfaces will then also need to be rewritten.

A more sophisticated approach lies in the so-called 'loose coupling' that can be achieved using enterprise application integration (EAI) tools based on web service technologies and pre-built connectors.

Most leading companies, including Sage, use web service standards in their applications. These can be used to expose the programming interfaces of any piece of software to enable it to 'talk' to any other application using the same standards. Coupled with the used of pre-built adapters, this approach can enable separate applications to be linked together.

For example, the Sage Application Integration Server (AIS) acts as a common communications interface for multiple applications. In companies that have deployed AIS, customer information need only be entered into one product (for example, a SalesLogix customer relationship management system) for it to populate other applications connected to the AIS platform (for example, a Sage 200 accounting system). AIS also allows Sage products to be linked to new, legacy or third party applications, or pre-existing internal applications, providing a flexible platform that can help extend the life of earlier investments.

This approach to integration is particularly useful as a means of preserving the departmental systems already in place and there are many reasons why a company might opt to take this course.

Firstly, companies will usually have spent considerable sums on developing their departmental systems and may understandably be keen to them in place in order to maximise the return achieved from such expenditure.

Secondly, such applications will have typically been developed specifically around the needs of the individual departments concerned. As a result they may have become engrained into how that part of the business operates. Consequently any attempt to replace them is likely to cause major disruption. As well as training for users, the introduction of a new system may well require the adoption of completely new ways of working. A company may simply judge that it wants to avoid the cost and upheaval involved for the time being.

Finally, a company might also wish to retain existing departmental systems simply because there are key areas of functionality available in those applications that simply are not present in any potential replacements. However, achieving integration through linking disparate departmental systems is not without its drawbacks.

Supporting disparate departmental systems entails significant costs. As well as having to provide technical support for multiple applications, separate training packages need to be delivered for the different software packages involved as each will typically involve users in working with a very different interface. In addition, although EAI tools can go along way to linking separate systems together, compatibility issues can still arise, especially when one department, say, decides to upgrade its applications. The cost of the time and effort required to identify and address the source of any such problems can be significant.

The costs involved in supporting multiple departmental systems linked together are thus typically considerable. Before a company decides simply on cost grounds to share information across the enterprise by linking existing departmental systems together, it needs to ensure that this course of action really will represent the cheaper option in the long run.

The Integrated Suite

The final option a company has for making data available across the organisation is to implement one single shared system containing applications for each part of the business in one complete software suite. As well as a core set of key business applications, such suites also typically provide a platform into which extra optional

modules containing additional functionality can be plugged to enable the system to be further tailored to an organisation's particular requirements.

Such systems used to be the preserve of the largest organisations and were developed by the likes of SAP and Oracle. However, suites designed for mid-market and smaller firms are now becoming available. For example Sage 1000 is the result of low level engineering of the company's familiar Sage 500 ERP package and its well-known Sage CRM MME product. Providing a single application that integrates front office CRM and back office ERP, all of a business's operations are supported within a single system from accounting to customer service and from manufacturing to sales management.

There can be no denying that implementing a new single system enterprise wide represents a major undertaking. However, this needs to be offset against the major benefits that a company can subsequently enjoy.

With CRM and ERP processes integrated in one system, one can readily monitor activity right across the organisation. Consequently, the performance of cross-functional processes can be viewed end-to-end, enabling any problems to be swiftly identified and appropriate corrective action taken.

In addition, data on any aspect of the organisation can be made available to anyone within the organisation in a form tailored to their role so that they can coordinate their activity accordingly. For example, sales staff and customer service agents can have immediate access to customer records, stock information and credit history. Both sets of data can be accessed from one screen, enabling a customer order to be taken, credit-checked and scheduled for delivery in one uninterrupted transaction.

Similarly, by using a single integrated suite of applications, data entered in any part of the organisation instantly becomes available to any other department enabling the company to respond to changing conditions in real time. Thus, for example, customer facing staff could use information on actual stock levels to target discounts on 'near end of life' items.

As well as enhancing operational agility in this way, the use of a single integrated suite of applications also offers major benefits when it comes to system development and support. With all the applications residing in a single suite, there is no need to work on developing links between applications to enable data to be exchanged between them. As a result, development times and costs are reduced dramatically compared to attempting to integrate existing disparate departmental systems.

Consequently the cost of implementing a single application suite will typically be much cheaper than implementing separate departmental systems and attempting to link them together. For example, although the combined cost of a 10-user ERP system and a 20-user CRM system is comparable with that of a 30-user integrated system, it is a far bigger and more expensive task for systems integrators to first install and then 'glue together' two separate systems than to deploy a single application suite out of the box.

Similarly, with all the business applications developed in a single pre-integrated suite, one no longer needs to be concerned with compatibility issues or conflicts between different proprietary systems. This in turn can lead to a tremendous fall in the support costs involved in running a company's information systems whilst at the same time

increasing the organisation's flexibility. Thus any part of the business becomes able to redevelop its applications at any time without the need for lengthy reviews about possible impacts on other departmental systems and any remedial work required.

With only one system in place, significant economies of scale also become possible. Thus technical support only needs to be developed for one system. Similarly, training can become more standardised with only one package involved. Finally, because all of the suite's applications are in principle available to all users, one no longer has to try to second guess the future and estimate how many licenses will be required for each area of functionality.

Conclusion

Which approach to integrating applications across the business will be the most appropriate will depend upon a company's particular situation. Thus linking existing disparate departmental systems offers a means of preserving previous IT investments, avoids the disruption involved in introducing new systems and may be particularly appropriate when the applications involved incorporate functionality not available elsewhere.

In contrast, using a single suite of applications shared across the business avoids any compatibility issues between departmental systems, is much cheaper to maintain and upgrade and can be more easily adapted to deal with changes increasing business agility.

The only absolute is that the common practice of attempting to share information between departments simply by having staff repeatedly enter the same data into multiple applications is not sustainable. As well as the cost and duplicated effort involved, constantly re-keying the same data inevitably leads to errors leaking into the information upon which key business decisions are then subsequently taken.

Products and further information

Sage is a leading provider of business management software to both large and small companies, that operate across all industries. We offer a portfolio of software suites designed to help you automate key processes right across your organisation, including:

- Accounts
- Finance
- Enterprise Resource Planning
- Payroll
- Customer Relationship Management
- Business Intelligence

We also have a number of specialist applications designed specifically for the following sectors:

- Retail
- Manufacturing
- Construction

We have a variety of channels through which our customers can buy our products, including:

- Retailers
- Sage website
- Business Partners
- Accountants
- Direct from Sage

Currently 700,000 customers in the UK have registered Sage products and there are over 110 third-party products, designed by Sage's developer community.

To find out more call us on 0845 111 9988, email customer.development@sage.com or visit www.sage.co.uk/erp

Sage advise that before implementing any internet solution you consult a network specialist to discuss security issues. Sage is not responsible for either the content or maintenance of the web sites referred to in this document.