

Superfast Business Wales



Business Guide

Integrating Systems

If you source different software applications without thinking about how they will work together, this can lead to problems and inflexibility in the medium to longer term.

www.business.wales.gov.uk/superfastbusinesswales | 03000 6 03000





Integrating Systems

Computer systems and Apps to support your business are widely available, highly functional and, these days, cost effective. Implementing those systems is easy, often merely a case of signing up to a cloud application. It has never been easier to automate key tasks.

However, there is an important caveat to that ease of automation. If you source different software applications without thinking about how they will work together, this can lead to problems and inflexibility in the medium to longer term.

At an early stage, it is important to consider the overall flow of information and the framework within which the systems should work. If you are considering e-commerce or other connected systems across the Net, then you will probably require your data and process flows to be automated and to work to best practice levels. In this increasingly connected business world, you can also integrate your systems with those of your business partners, who are part of your extended business flow, sharing data and speeding responses both upstream and downstream in your value chain.

Examining and optimising these process flows can increase the agility of your business, promote the sharing of data between systems within your business and reduce time wasting and errors due to re-entering data more than once.

Mapping your process flows and identifying the key data that is required for them to work effectively is also an initial step towards identifying and eliminating waste and streamlining business flows.

Fortunately, today's Superfast Broadband-enabled services are largely designed with integration in mind. Many Software as a Service (SaaS) offerings have sections of their sites dedicated to other systems with which they interface (for an example look at www.xero.com/uk/add-ons/).

This is possible because most software and app developers now publish Application Programming Interfaces (APIs) to their products which enable other developers to create seamless links between related products. There are even applications available now that exist to simplify this process.

Make it possible for your business to flow effortlessly by ensuring you understand how your systems work together and how they can share information.



Understand

What Business Benefits Can I Expect?

Understanding and improving your business flows will save time and money by:

- Systems working together without 'work-rounds' and additional manual processes which cost time and potentially introduce error
- Having certainty about the quality of the information you hold. Data quality can be achieved once for all applications
- Having one version of the truth, allowing you to compare information and interpret results from different stages of a process without having to adapt them first

Additional agility in the business can allow for the automation of business processes and the application of lean principles:

- Better productivity within the business
- Reduced waste and reworking
- Easier compliance with quality standards required by industry norms or trading partner's requirement.

Flexibility in the testing and adoption of new software applications

- You do not need to be tied into specific products in the long term – APIs mean that you can try out new products and services on the marketplace and – as long as you manage your data properly and plan the migration carefully – switch to cheaper or more powerful solutions when the time is right. Being aware of this can save huge problems should a software developer go out of business or stop supporting a given product.

Adopt

Getting Started

Analyse and document your business process flows (for example customer ordering, stock replenishment, people management). Include flows external to the business (for example with customers and suppliers). For instance, when a new employee starts, your personnel record used for managing their access to systems, entry cards etc. can also contain information from their P45 and their pay rate and hours which can be passed to the payroll system to ensure they are paid on time and accurately.



- Create a business process flow diagram using drawing tools, specific modelling software or just a pencil and paper
- Identify current manual processes and data entry needs
- Analyse and document the data used – keep it simple but understand different formats and naming conventions. For example—How is an employee identified and held in different systems? Is it just first name and last name? Is there an employee number? How is that formatted? Does the system allow for formal first name and nickname? How long are the data fields? Are they the same for all instances of employee name?
- Research data requirements for exchanging information externally
- For each data item, create a table of differences and decide how to harmonise those requirements

As part of Revisiting your Business ICT, consider solutions for overcoming the blocks and areas for manual intervention – these could be minor tweaks or a complete remodelling of systems:

- Begin planning how to bring those manual processes into the flow
- Consider packages or bespoke programming to do so
- Set priorities and build a phased or agile plan for implementing changes and testing them before going live. Include phases, costs and timescales

Exploit

Understanding Your Information

Whilst there may be technology to support your efforts, the main activity in integrating systems is understanding and mapping the flow of information within your business so that, at any stage, you know what data is needed in order for a process to operate, where that data is coming from, where it is held and where the resulting data is then used.

This input-process-output-storage model can then be extended to cover all of the processes in your business, where one output becomes the input for another process. Harmonising the way in which data is defined and held will enable you to make sure that information can flow through the business effectively.

There are many standards that can be used to exchange data with other bodies within your value and reporting chains—suppliers, customers, regulators, Government bodies. Make sure that your internal data can be transformed easily into these standard formats to improve effectiveness.

Defining data once, holding it in the fewest possible places and sharing it between applications reduces waste and error. The nearer you can come to having '**one version of the truth**', the more effective your current systems will be and the easier it will be to enhance or extend them.



Top Tips

Prepare well

Ensure that you have access to business process information relating to both automated and manual systems and access to the right skills. Consider hiring skilled people on contract or through service providers.

Adopt a layered approach

Begin at the top level and map the processes that drive the business (e.g. sales to invoicing, raw materials to finished goods, replenishment from suppliers and purchase payments.) Move down layer by layer. Most systems have two or three layers.

Model the Input-Process-Output-Storage

Every process has an input – where is that from? Where does the output from the process get used? What storage (files/databases/forms) is there and where is that stored data kept?

Link I-P-O-S models together

Show the flow of processes throughout the business and its associated external chains. Identify computer and manual systems and if they are currently fit for purpose.

Begin compiling a Data Dictionary

A spreadsheet is a good tool for this. Include a common name for the data item and a column for each system where it is used including the format in each case.

Consult widely

Validate your conclusions and improve your models and Data Dictionary by discussions with key people inside and outside the business.

Design ideal systems solutions

Link all the processes together and look at ideal solutions to meet the business needs. Are all processes still relevant? Are all steps within processes still needed?

Produce an operational Data Dictionary

Determine the most effective format and definition of common pieces of data so that they work in multiple systems. Where different formats cannot be avoided, document how data will transition from one process to another.

Create a practical phased schedule

We don't live in an ideal world and solutions will need to be implemented in logical stages to meet time requirements and budget constraints. An agile model will implement little and often.

Consider introduction and training

Make sure that new systems, as they come on stream, do what they were designed to do and that they can be operated by existing team members.



NEXT STEPS

1. Register to attend a fully-funded Business Development Workshop.
www.business.wales.gov.uk/superfastbusinesswales/events
2. Make an appointment to see a Business Advisor who will help you create a personal action plan to grow your business.
www.business.wales.gov.uk/contact-us

For further information on Systems Integration take a look at:

See how other businesses in Wales have exploited Superfast Broadband
www.business.wales.gov.uk/superfastbusinesswales/superfast-success-stories

Find out how much your business could save with our
www.business.wales.gov.uk/superfastbusinesswales/savings-calculator

Other business guides that may interest you include:
www.business.wales.gov.uk/superfastbusinesswales/superfast-business-guides

For monthly updates on business development, technology news and events
subscribe to the Business Wales Newsletter below.
<https://public.govdelivery.com/accounts/UKWALES/subscriber/new>

For more information call 03000 6 03000 or visit:
www.business.wales.gov.uk/superfastbusinesswales

