Integrating Back Office Systems with E-Commerce

Small businesses that have a website with e-commerce options (e.g. online ordering and online selling) or are thinking about implementing an e-commerce solution will find this a useful resource for integrating back office systems with e-commerce.

What is Integration?

For the purposes of this booklet, integration refers to the coordination between e-commerce systems and back office processes. Integration means that information from both systems is accessible from one location or database.

Back Office Systems

Back office operations include processes used by employees that help keep the business running. Accounting, finance, inventory, order fulfillment, distribution, and shipping are examples of back office systems. Back office systems can be manual or automated. Front office systems are focussed on customers and refer to activities such as sales, marketing and customer service. Effective integration of back office systems with e-commerce improves coordination with the front office systems resulting in better customer service and reduced duplication of effort by staff.

Why Integration for Small Businesses?

When your back office and e-commerce systems are disconnected this costs more time, money, and resources. If only a portion of your revenues come from online sales you may still stand to benefit from the use of less expensive off the shelf packages, which provide some integration. If your online sales are growing or if a large portion of your revenue is from online sales, looking into more integrated solutions may prove worthwhile.
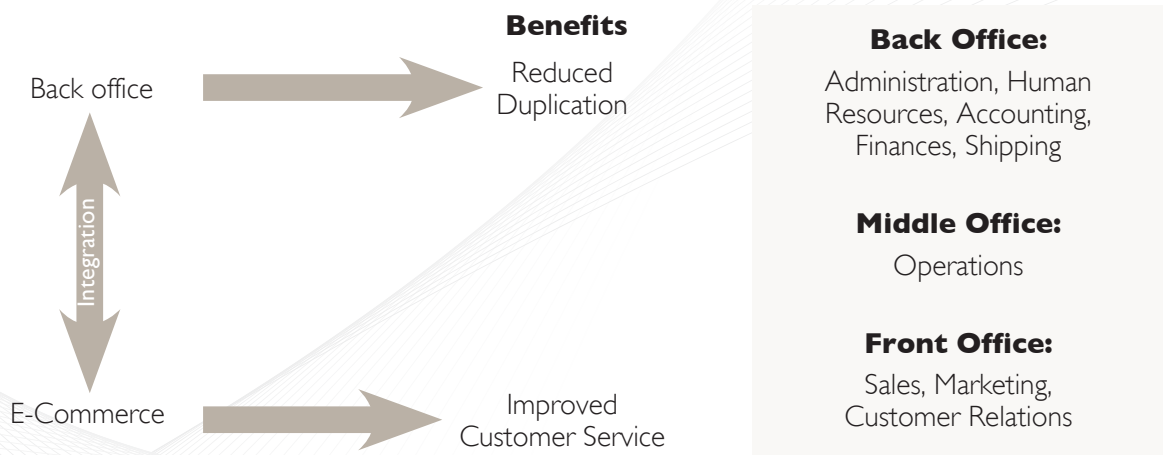
innoVationpei

Examples of Integration

A fully integrated online system -

• Produces a packing slip for easy order fulfillment including items on backorder;

• Produces daily backorder lists and maintains inventory counts plus order lists for inventory that drops below preset limits;

• Integrates with Canada Post and includes shipping costs on invoice (shipping costs based on weight and volume of products);

• Tells the customer if the item is out-of-stock and will be ordered plus approximate shipping time;

• Asks if the customer wants partial shipment of in-stock items or if they perfer to wait for all items before making one shipment;

• Produces shipping labels for packaging;

• Automatically produces invoices marked paid at end of a transaction and emails it to the client;

• Integrates with accounting system and inputs the commissions or fees paid, shipping fees and all sales taxes;

• Handles all credit card transactions through the service provider's accounts with a reasonable fee for this service;

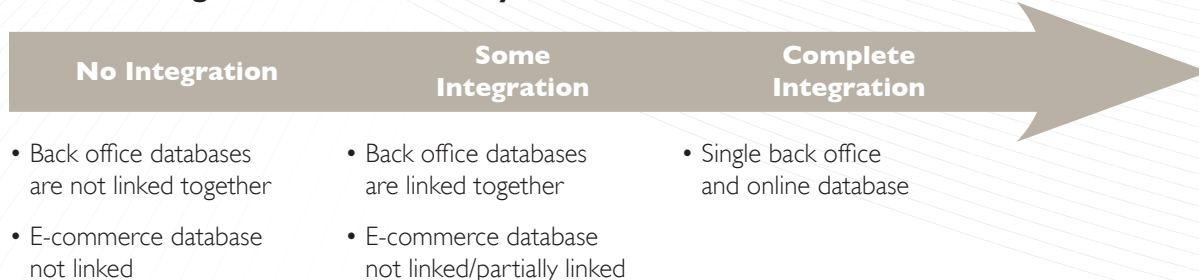## Benefits of Integration of Back Office and E-Commerce

The following diagram highlights the benefits of integrating back office systems with e-commerce. These benefits include reduced duplication of effort and improved customer service.

Benefits

Back office → Reduced Duplication

Integration

E-Commerce → Improved Customer Service

Back Office:
Administration, Human Resources, Accounting, Finances, Shipping

Middle Office:
Operations

Front Office:
Sales, Marketing, Customer Relations

Levels of Integration

Keep in mind that back office systems can be integrated at various levels as shown in the graphic below.

Levels of Integration - Back Office Systems

No Integration	Some Integration	Complete Integration
• Back office databases are not linked together	• Back office databases are linked together	• Single back office and online database
• E-commerce database not linked	• E-commerce database not linked/partially linked	

No integration means that employees will have extra work to do. For example, they would have to look at two databases to check whether a customer has purchased a product or they may have to record sales into two databases.

Better integration means that information about online sales is automatically included in back office systems. This information does not have to be entered into the system more than once.

Complete integration may be one-way or two-way, as illustrated by the following examples.

Example #1: One-Way Integration

As orders are placed in your online store, the integration software automatically downloads the orders (allowing you to see all of the orders). If your software allows integration with shipping processes, then you could also receive a packing list and transfer the shipping addresses and postal tracking numbers into your accounting package.

Example #2: One-Way Integration

Your regular business ("bricks-and-mortar") sales are entered into your accounting package. Once the shipping is completed you have all the updated order information in your accounting package. For customer inquires, you can use the information contained in the database to show you the updated information (e.g. status of the order).

Example #3: Two-Way Integration

Any sales that occur in your bricks-and mortar store (when entered into a software package) automatically updates the stock numbers in your e-commerce package. This can help to reduce shipping wait times.

Five Reasons to Integrate Your Back Office and E-Commerce Systems

1. **More Affordable Integration Options**. Integration options for small businesses (e.g. off-the-shelf software) are now more affordable.

2. **Less Administrative Work**. Administrative work is decreased because information is entered just once. Integration also means you do not have to check information between systems.

3. **Lower Operational Costs**. More efficient processes and less duplication of work can help reduce overhead and cost of sales.

4. **Improved Customer Service**. Customer service is improved because integration reduces delays in providing information to the customer. For example, employees should be able to quickly check to see the status of a customer's order. Integration gives you access to more accurate information about the product, pricing and stock availability. This information can be efficiently shared with the customer.

5. **Increased Readiness for Change**. Devices such as cell phones and handheld computers are becoming more popular ways to link to back office systems. Integration can help your business adapt to this trend.

Assessing Your Integration Needs

Whether you need to integrate your systems depends on how much of your business is done online. Review the following table to help you assess if integration is right for you.

Do you need to integrate your back office and e-commerce systems?	Yes	No
1. Is a considerable portion of your business done online?		
2. Do employees have to check two or more databases to find out information about sales, inventory, shipping, etc.?		
3. Do employees have to enter information from the e-commerce site (e.g. number of orders) into the back office database(s)? Do you have duplicate mailing lists between different types of customer lists?		

If you answered yes to the first question and yes to either questions 2 or 3, consider if you are ready to link your back office and e-commerce systems.

What are Your Options?

Your best integration option depends on what you already have in place. For example, if you have an online storefront that you purchased from one service provider and back office software that came from another source, it will likely be difficult to link these systems. If your online store and back office software use open source protocols (rules), then you could consider off-the-shelf software packages. In choosing an appropriate option you also need to consider:

- The flexibility of the option - the option should be as flexible as possible to allow your online business to grow.

- Which e-commerce processes you want linked to your back office (e.g. sales, available shopping cart items).

- The range of products you want to sell online.

> If you are thinking of setting up an online store, check to see if it will work with your back office systems.
>
> If you are thinking of purchasing back office software, check if it will work with your e-commerce system.
>
> *Source: Integrating your back office and online systems. www.businesslink.gov.uk*

Integration Options	Considerations
Off-the-Shelf Software Software that is readily available and requires little or no customization. This software can help link your existing e-commerce and back-office systems.	• Appropriate when you already have an existing e-commerce website. • Most affordable, least complex solution. • Appropriate when online business is growing, but a large portion of your business is offline. • Will the software work with your back office systems? • Will the software work with any other back office products or services you use? (i.e. relational database management system, accounting packages, delivery service). • Do you need one-way or two-way integration? Do you need the two systems to communicate with each other? For example, information about availability of products is imported to your online store and information about sales is imported to your accounting system.
Off-the-Shelf E-Commerce Software with some Integration Capabilities	• Appropriate when you are setting up an e-commerce website. • Will the software work with your back office systems or products? • What are the integration features? What e-commerce processes are linked to the back office? • Might be enough integration until your business reaches a certain size. • Might require expert programming assistance.
Leasing E-Commerce Solution through ASP Leasing an online storefront through an application service provider (ASP). Some integration is achieved through messaging with back office systems.	• This is a less complex solution because the integration is managed for you. • Might not be enough integration if your online sales grow. • Need to ensure that the ASP is credible and can provide the service. • More expensive than off-the-shelf solutions.

Integration Options	Considerations
Customized Integration Software / Middleware Customized back office/ e-commerce software or middleware allows the two systems to communicate and work together.	• More appropriate where online business is becoming critical to your business. • Must work with major operating systems such as Windows or Linux. • Is it written to open standards? • Do you want the two systems to communicate in real time or through batch processing? Real time means that information between the two systems is instantaneous. Batch processing means that the systems communicate at regular time intervals. Real-time is the more expensive option. • Requires expert programming assistance.
Fully Integrated E-Commerce System An e-commerce solution that allows for full integration between the storefront and back office processes.	• Suitable for businesses with complex e-commerce needs and for businesses that have a large volume of online transactions. • Requires credible and experienced e-commerce service provider. • Very expensive.

Acknowledgement