



# **Towards an E-business Strategy for Java Snacks**

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## Introduction

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Following an initial discussion with Alan Manning, IT Manager at Java Snacks, it was agreed that Shared Skills would undertake an e-business audit. The deliverable would be a document consisting of the summary of the audit, a list of Java Snacks e-business priorities and a set of strategic recommendations identified.

Shared Skills are an independent E-commerce consultancy company with over 20 years combined experience working with EDI and system integration, with a high level of SAP competency. We also have significant exposure to the migration from EDI to the new web-based technologies, of which the most notable is XML.

The audit was conducted through a series of discussions held at Java Snacks, Winchester from 16/5/2001 to 18/5/2001 at which Java Snacks were represented by Alan Manning, IT Manager, and Shared Skills were represented by Bruce Colley, Senior Consultant.





## Background

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Java Snacks are producers of a wide range of snack products.

Java Snacks have developed a sophisticated network of partners to develop the wide range of snack-based products. Java Snacks produce the base material. The value added products are produced and packaged by a set of sub-contract manufacturers, working under contract to Java Snacks who continue to own the product. The end products are stored, prior to shipment by two main warehouse operators, who take responsibility for the distribution of the product.

Java Snacks store much of the intermediate product in a third party store. The arrangement with the stores, warehouses and sub-contract manufacturers is that Java Snacks own all product. As a result Java Snacks have an ongoing task to check and update the inventory at all locations.

Java Snacks deal with all the major UK supermarkets receiving sales orders and in a number of cases sending invoices via EDI. They also receive Debit Notes and Remittance Advices from Asda and return a Price File.

Java Snacks own the domain names [www.javasnacks.co.uk](http://www.javasnacks.co.uk). It is not yet operational but is proposed for development as an internal Intranet, holding information about staff and other internal functions.

Java Snacks have indicated that they have no plans to sell directly to the end consumer over the Internet for the foreseeable future.







## E-Business Audit

The following section reviews the known business processes. Most of the discussions with the key personnel focused on partners directly involved in the production process. The audit goes on to review processes further along the supply chain and also investigates processes relating to procurement.

### Customer Community

The majority of Java Snacks orders are received using EDI. The following diagram illustrates the scope of messages received and sent for each EDI trading partner.

	S/O	Invoice	SRM	Debit	Price file	Planning	Prod. plan
Safeway	✓	✓					
Asda	✓	✓	✓				
Sainsbury	✓	✓				✉	✉
Somerfield	✓	✓					
Iceland	✓	✓					
Budgens	✓						
Coop	✉	✉					
Tescos	✓	✓					
Waitrose	✓	✓				✉	
Bookers		✓					
Walmart	✉	✉	✉	✉	✉	✉	✉
Kwiksave	✉						
Morrisons	✉						



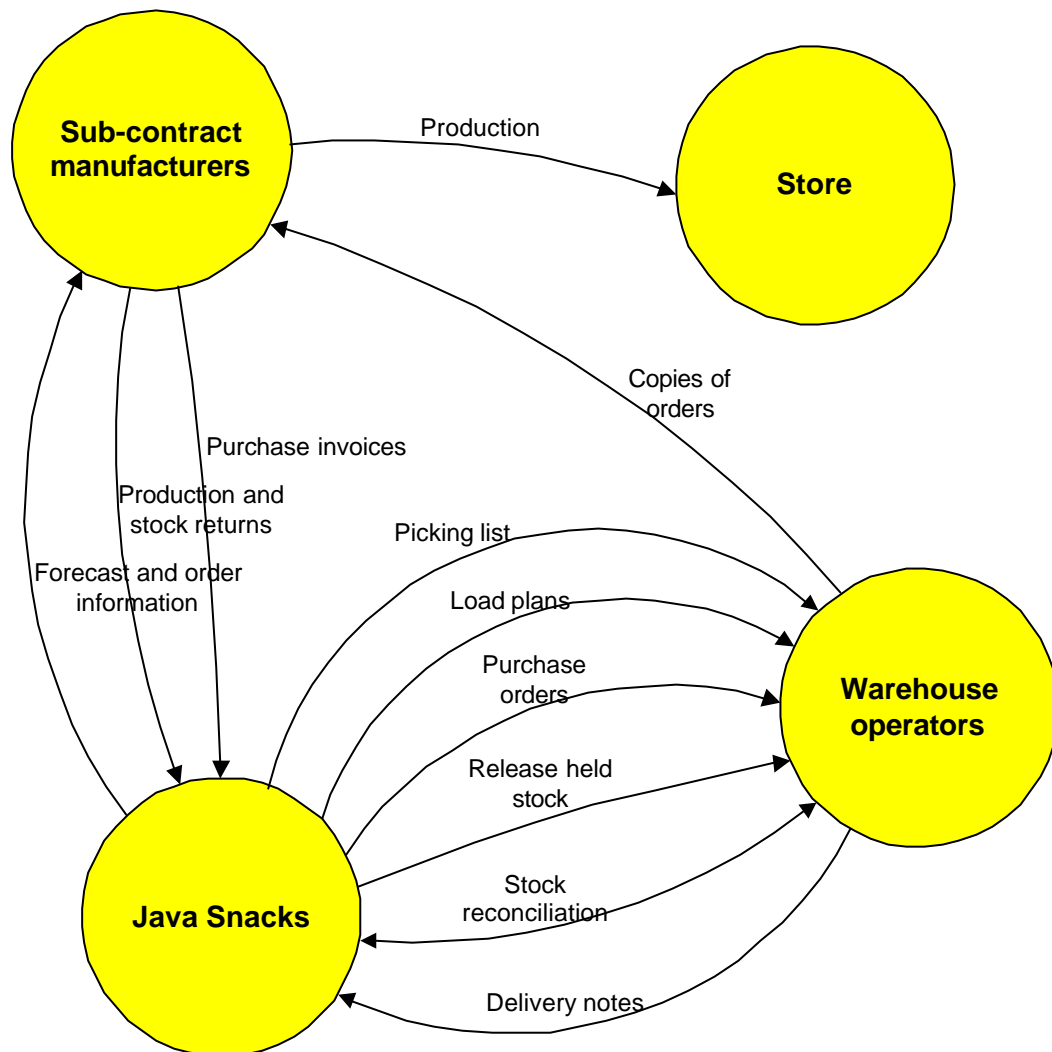
Operational  
 Work required  
 Future requirement  
 To be reassessed

### Supplier Community

Java Snacks have somewhere in the region of 100 suppliers, with purchase orders being raised on approximately 20% on a weekly basis. No purchase orders are currently handled electronically.

### Inter-company community

The inter-company community is of particular relevance to Java Snacks and their supply chain. The following diagram illustrates the complexity of the business processes that currently take place on a regular basis.



Of these the, the only electronic process (excluding email) is the process of releasing held stock from one of the warehouse operators, which is handled by a terminal link to the end business system.

Areas identified as being likely to deliver significant benefit are:

- Copies of orders to sub-contract manufacturer – Java Snacks have identified that the current process by which copies of orders are faxed to the various sub-contract manufacturers is inefficient and an automated process would not only make the process more efficient, but would also improve the response times.
- Stock reconciliation – All of the partners within the extended supply chain hold stock and the ongoing process of stock reconciliation is a time consuming process. This is exacerbated as a result of the wide range of business systems in use. At present, Java Snacks conduct a “book-to-book” exercise with some of the warehouse operators. An automated process that could reduce the work load and increase the potential audit frequency could provide significant business benefits.



- Display of Key Performance Indicators – Java Snacks would like the ability to post information relating to the performance of the sub-contract manufacturers. Some of the information such as the ranking would be available to full sub-contract manufacturer community. Information such as scores and specific comments might be accessible only by the individual sub-contract manufacturers.

Other areas that could also deliver significant benefit are:

- Picking list to the warehouse operators – It is expected that SAP will soon be capable of generating a picking list. There could be clear benefits from presenting this information electronically.
- Delivery confirmation from the warehouse operator – It has been suggested that the handling of delivery notes is one of the most time intensive tasks undertaken by the sales desk. Clearly any efficiencies produced in this area, especially if tied in with the pick list and sales orders, would provide clear business benefits.

## **Internal processes**

The primary internal business functions are managed by the SAP R/3 V4.6 system. An internal intranet responsible for delivering broad company information such as organisational charts is in the process of being developed.

Discussions with the Quality representative identified the possible web-hosting of the “Non-conformance report” as being of clear benefit. It was also clear from discussions that there were a wide range of forms supporting Personnel, Health and Safety and Quality that could gain from being made available on the internet.

The potential posting of the results form, returned from the external labs could be made accessible for members within R&D.



## Strategic Principals

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The following principals should underpin any e-business strategy or implementations:

- The use of relevant technologies – All technology innovations must be relevant to the Java Snacks business processes. Java Snacks have made it clear that their core competencies are in food production and marketing and not in Information Technology. Their clear preference is to use technology to make their business processes more effective.
- Maximize integration potential – Java Snacks have made a significant investment in their SAP implementation. All solutions should aim to provide a seamless integration into SAP with the minimum of maintenance.
- To avoid “re-inventing the wheel” – Java Snacks are already using e-commerce effectively with their buyers through the use of EDI. This strategy will first look towards utilising existing channels and infrastructures before proposing new alternatives.
- Information Technology adapts to the business processes – In most cases the proposed information technology solutions should not change the way that Java Snacks conduct their business. Any proposed changes to business practices should be highlighted and agreed in advance.
- Scalability – Java Snacks have aggressive strategy for growth that envisages expansion through Europe.
- Flexibility and adaptability – The Java Snacks value chain consists of a diverse range of business partners. Technical environments may range from large SAP installations, to legacy AS400 environments to a single Windows PC. Proposed solutions should provide business process options for the full range of business partners.
- Future proofing and avoiding “lock-in” – Internet technologies progress at a rapid rate, with significant new innovations occurring several times each year. The integration of the best of breed from a range of Internet technology providers is likely to provide a greater degree of future proofing than the adoption of a technical monolith from a single provider. The adoption of a range of technologies will also increase flexibility and avoid supplier lock-in.
- Standards – The introduction of XML has resulted in a wide range of initiatives in the development of standards across industry sectors. It is in Java Snacks interests to adopt a standard for XML that is in line with, or at least closely adheres to standards developed within parallel market sectors.
- Security – The proposed solutions must ensure security of information.
- 24 x 7 availability – The extent of the e-business solution demands 24 x 7 availability.
- Support – Java Snacks strategic intent is to stick to their core competencies. Any solution should propose a support option, both in terms of the day to day maintenance and in terms of longer term development.

## E-business Processes

### Integrate Inter-community Business Processes

The audit identified the importance to the supply chain of improving the interface between the Java Snacks, the sub-contract manufacturers, the warehouse operators and the stores.

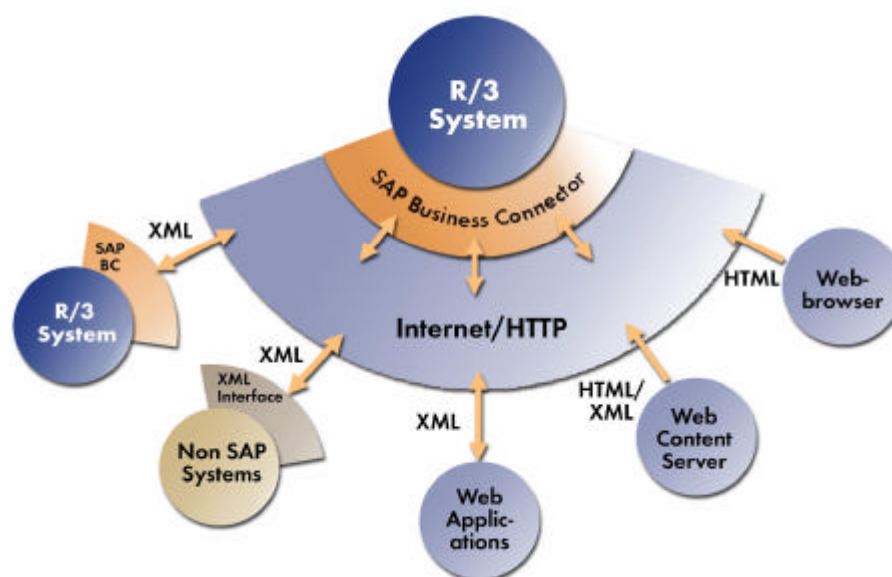
The processes of copies of orders to the sub-contract manufacturers, shipping notifications from the warehouse operators and stock reconciliation across the board were identified as likely to provide significant benefits.

There is little doubt that a strong generic and integrated solution can be proposed that matches the individual requirements. It is also clear however that increased integration could offer a new business process opportunity. Typically the warehouse operators would produce a stock snapshot message (EDI or XML) on a regular basis that would enable both Java Snacks and the sub-contract manufacturers to have up-to-date information on stock levels. The warehouse operators would provide stock replenishment messages to the sub-contract manufacturers, who would also have been provided with forecast and order information from Java Snacks. The range of options depends in part on the capabilities of the end systems used by the warehouse operators and the sub-contract manufacturers.

**Recommend – Review integration capabilities at the warehouse operators and sub-contract manufacturers. Develop a questionnaire (could be web-hosted).**

**Recommend – Setup a working group with representatives from the inter-community to review business process streamlining.**

The defined processes lend themselves to a generic solution that is illustrated by the following diagram.

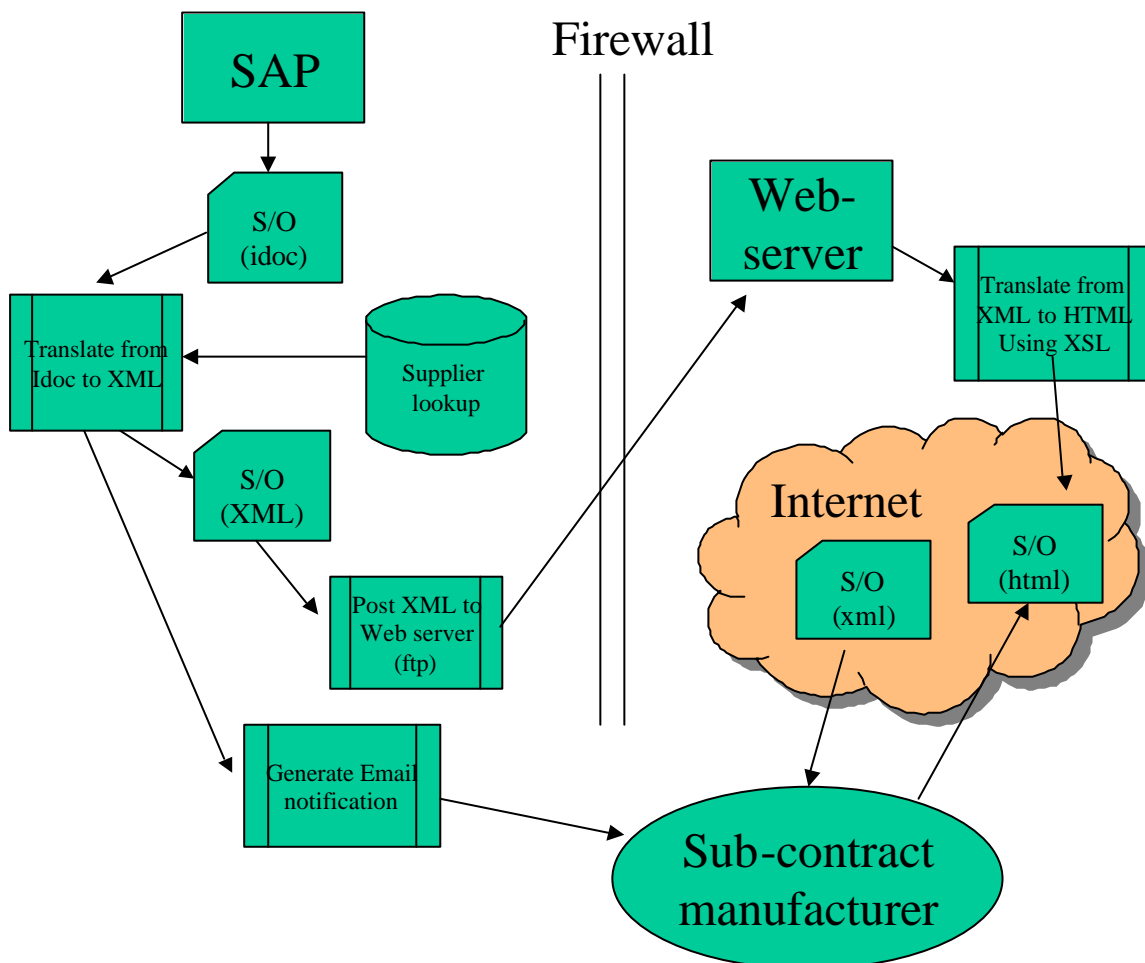


The SAP Business Connector is the process by which SAP imports and exports business information into and out of SAP. Most transfers currently use a batch IDOC process. It is likely at some stage in the future that the alternative transactional (BAPI) process will be utilised.

It is also important to note that the first two connections using XML can just as readily accept EDI.

### Copies of sales orders to the sub-contract manufacturers

The following diagram illustrates how the process might be adapted to enable sales orders to be made available to the sub-contract manufacturers:



The web-server may be located at Java Snacks or hosted by a recognised host provider.

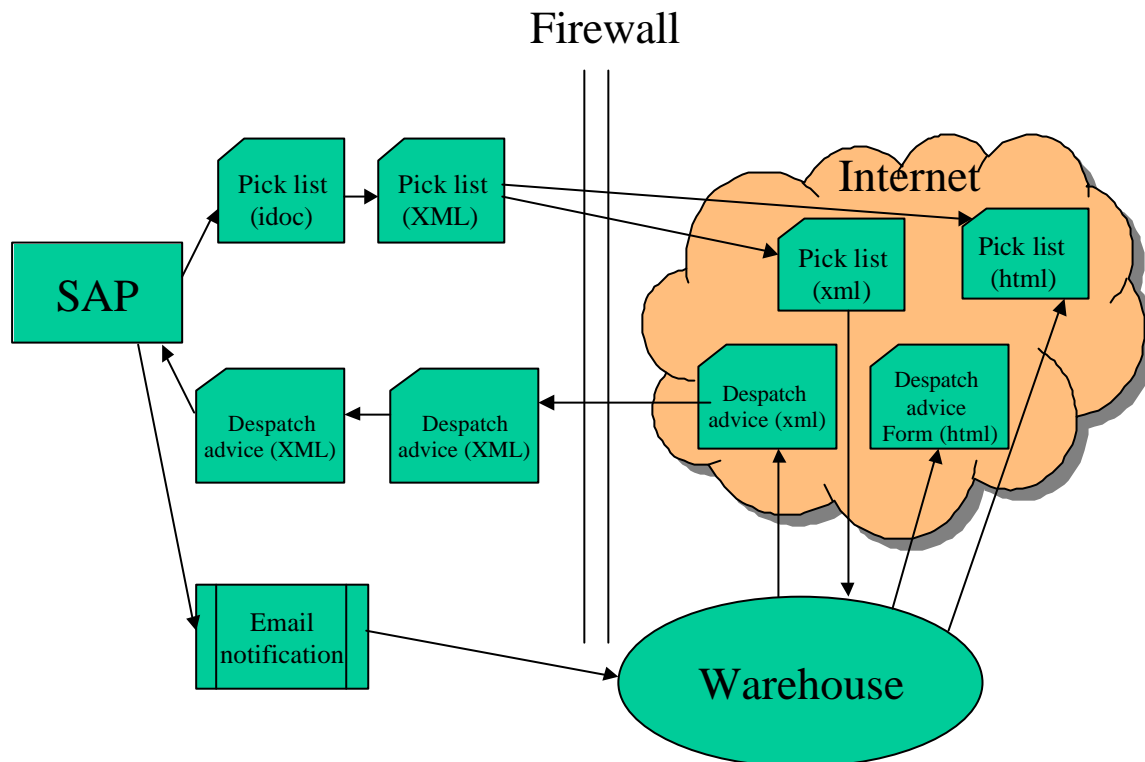
The ability to store the document on the web as an XML document and/or an HTML document gives the sub-contract manufacturer the option of developing a fully integrated solution into their end system or of viewing the orders from an Internet browser and printing if required.

A minor adjustment of the HTML sales order could generate an HTML form, enabling the sub-contract manufacturer to indicate acceptance or otherwise.

## Picking lists and delivery notes

The shipping notification process requires the warehouse operator to inform Java Snacks when deliveries have left the gate. Ideally a despatch advice will be sent to the end customer. In practice the despatch advice should be matched to the picking list, which should retain the original order information, in turn allowing matching within the original sales order processing system.

The process can become e-business enabled through a similar system identified above (note the diagram has been simplified)



This illustrates how a warehouse operator can take the XML pick list into their end system and then generate a delivery note (referred to as a despatch advice). Alternatively the web system would allow the viewing (and printing) of the HTML pick list and then the completion, over the web, of an HTML despatch advice form based on the original pick list.

Note it is not known whether SAP has been configured to accept despatch advices against original sales orders. In the normal process, SAP would generate despatch advices once the order had been picked and delivery confirmed. If no integration to SAP is possible then the ability to produce a timely printed confirmation of despatch is still a significant advance over the existing process.

**Recommend – The process needs to be discussed within a broad representative working group (see above).**

**Recommend – Discussions with SAP consultants to establish the data requirements for the picking list and requirements for the inbound despatch advice IDOC.**

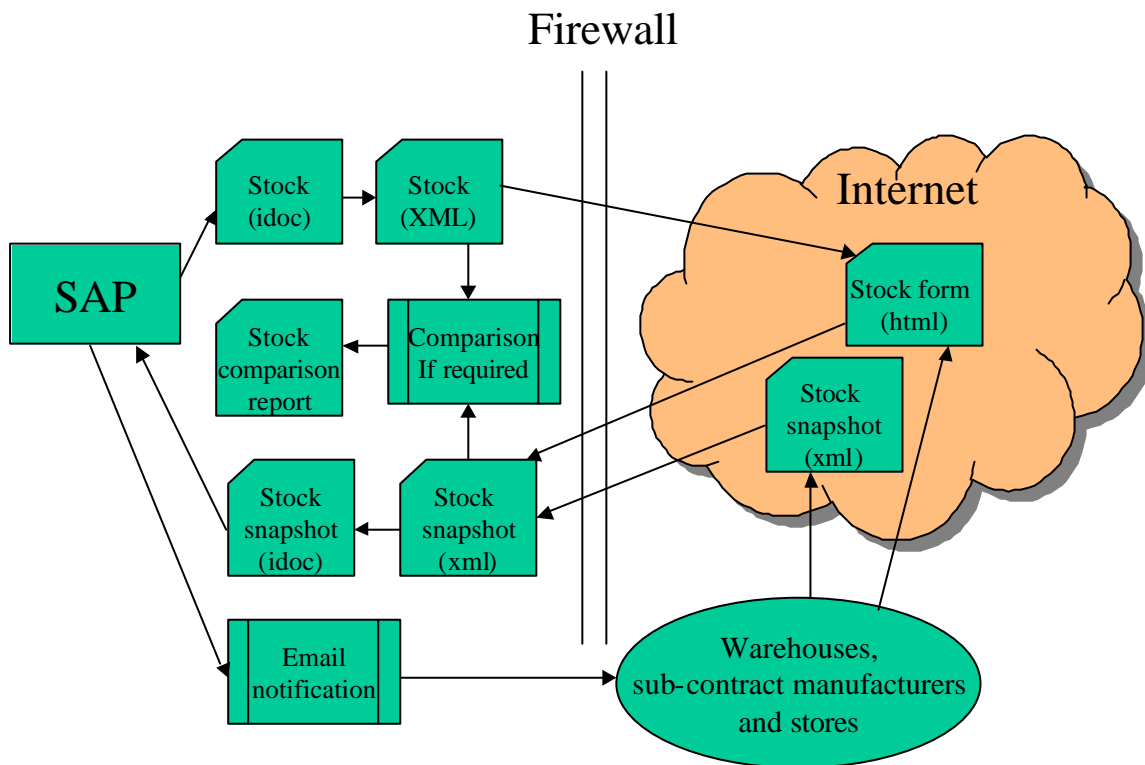
## Performance indicators

The issues relating to the display of Key Performance Indicators relate to the mechanisms for integrating with SAP. Further investigations are required to determine mechanisms for data interchange. A secondary issue is likely to be establishing rules and security profiles to limit access to information.

## Stock reconciliation

Ideally SAP has the ability to take a Stock snapshot and to generate a report of differences. If it does not have the comparison capability then a bespoke program will be required to compare the “input” and the “output” stock levels and to generate a report.

The following diagram illustrates the process:



The expected stock levels is extracted from SAP and used to generate an XML file and an HTML form. Business partners either complete the form and post or submit a stock snapshot XML file (could also be EDI). If SAP can import snapshot information then the XML file is converted to an IDOC and passed to SAP. SAP then updates stock levels and produces a report. Alternatively a comparison program compares the original stock situation with the snapshot and produces a comparison report.

**Recommend – Consultations with the Inter-community to establish integration capabilities.**

**Recommend – Review integration capabilities with SAP consultants.**

## Extend Customer Side

The existing customer community is well served through EDI and it is likely that there will be further EDI developments, both with existing customers and also to support EDI enabled customers in Europe.

It is likely that there will be a need to support a migration to XML for some of the existing EDI customers over the next 2 to 5 years. New customers, which may include buying groups, may also suggest XML as the preferred standard.

It has also been suggested that a number of smaller customers may require the ability to place orders directly on the web against a catalogue.

All of these processes can be supported using the interface methodologies identified above.

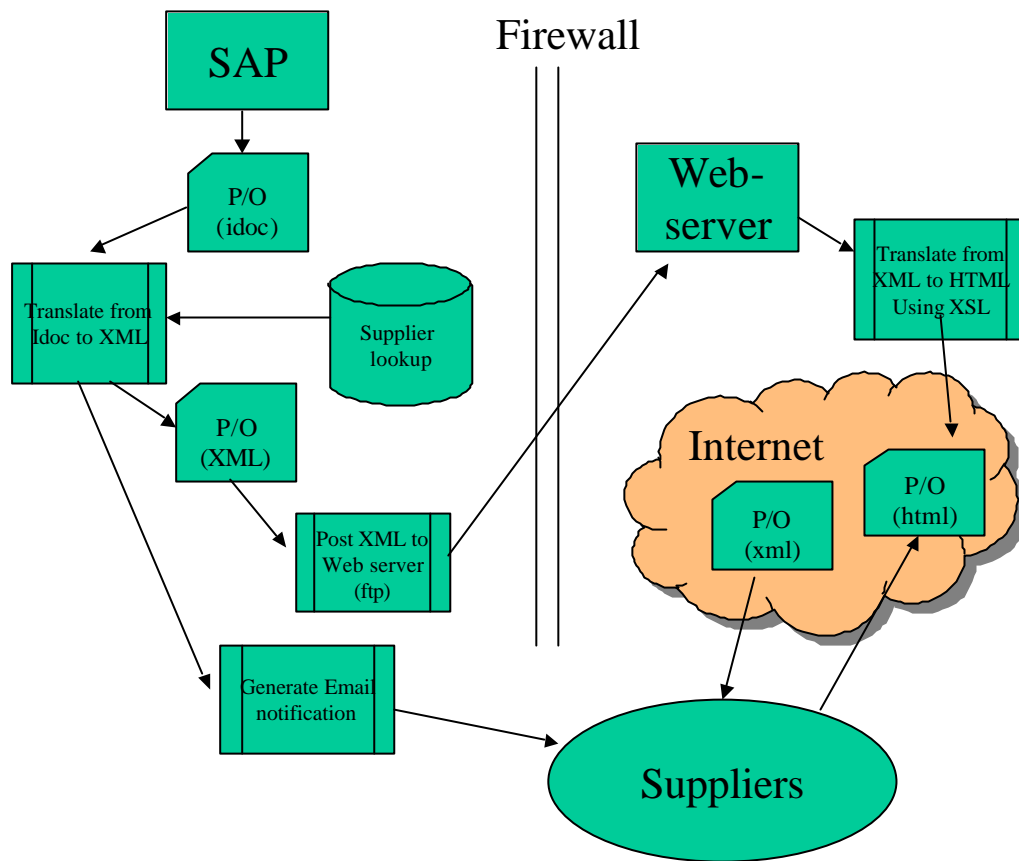
***Recommend – Java Snacks need to establish which of their existing customers are likely to require ordering using XML. Once they have established this to determine who will take responsibility for the XML standard. Ideally both parties will co-operate on the definition of the standard making use wherever possible of existing message standards.***

***Recommend – Java Snacks establish the business benefit of enabling their smaller customers to order online against a catalogue.***

## Extend Buyer Side

The benefits to extending e-business solutions to the buyer side are thought to be more marginal. The process is however similar to other proposed initiatives which will reduce the overall cost of introduction.

The following diagram illustrates the process for web-based purchase ordering:



It can be seen that the process is almost identical to that proposed for providing copies of sales orders to the sub-contract manufacturers.

***Recommend – Java Snacks to establish the likely take-up amongst their supplier community and also to determine the business benefits.***

## Internal Content Management

A wide range of forms supporting quality, health and safety, personnel and other information functions are likely to be identified. These forms can all be made available on the Internet either as HTML or as viewable PDF files. Where applicable information may be extracted from SAP using the procedures identified above. In other situations documents may be created externally or potentially extracted from an Access database or Excel spreadsheet.



## Technical considerations

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### Web Interface to SAP

The existing interface to SAP is EDI Server. Its current function is to convert EDI to SAP IDOC format and vice versa. EDI Server does not have an inherent capability to deal with XML, although there are low cost third party products that can undertake the XML conversion, after which EDI Server can audit the XML / HTML file and handle any necessary communications sessions.

An upgrade from EDI to XML Extranet Server will provide an internal mechanism for handling the XML conversion.

***Recommend – Java Snacks to establish the cost of the upgrade from EDI Server to XML Extranet Server.***

### SAP Integration

Many of the proposed initiatives will require interfacing to SAP. In almost all cases the interface is likely to be by the IDOC. The precise definition of the IDOC should be made available by the SAP consultancy team. A clear definition will provide all relevant information. For outbound processes the relevant SAP consultant should provide an example IDOC.

In some situations, such as the processing inbound sales orders, a BAPI interface will be required. Given access to the relevant information, Shared Skills can write the relevant interface.

### Web Design and Maintenance Functionality

Shared Skills have significant experience in developing an infrastructure to support a web-hosted system. Standard templates will be designed that provide a consistent look and feel to the system. Java Snacks or their designers should be consulted to ensure that the corporate image is maintained, without reducing the effectiveness of the site.

A series of administration tools will be configured to facilitate the maintenance of accounts and to allow the posting and updating of “free-form” information.

***Recommend – Shared Skills work with Java Snacks to develop a working prototype for the “copied orders” to the sub-contract manufacturers. A pilot be established to trail the process and measure its effectiveness.***

### Web-Hosting

A wide range of hosting options are available, including onsite hosting at Java Snacks. The full specification of the hosting requirements will depend on the technical infrastructure requirements.

***Recommend – Evaluation of most appropriate hosting option can wait until the technical solution has been piloted. The hosting of the pilot is not an issue.***





## Domain name

Java Snacks will require a suitable domain name for their business to business web site. Java Snacks will need to make a strategic decision as to whether the business to business domain name is the same as the Java Snacks Intranet.

***Recommend – Java Snacks to determine the name that will be used for their business to business web-site.***

## Client Integration

The proposed solutions do not require any end system integration at the client (i.e. sub-contract manufacturers, warehouse operators and stores). In all cases a view and print option is provided where integration is not possible. Shared Skills can provide a low cost integration and communications facility to most end business systems. A specifically developed client can have the advantage of providing secure HTTP or FTP communication sessions. Alternatively a standard database system (e.g. Access) could be developed and rolled out to appropriate sub-contract manufacturers who required some form of store and response system.

***Recommend – Java Snacks to work with Shared Skills to evaluate the client end options***





## Summary

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Following an e-business audit of Java Snacks a set of e-business processes have been proposed that should provide clear business benefits and efficiencies. A series of recommendations have been suggested that will allow the development of a full e-business strategy and implementation plan.

It has been proposed that the process of sending copies of sales orders to the sub-contract manufacturers be progressed as a contained pilot. This would allow Java Snacks to review the process at minimal cost and with minimum disruption to the existing business processes. The upgrade of EDI Server to XML Extranet Server would provide a more adaptable e-business platform, although it is not an absolute requirement.

Following a successful pilot it is strongly recommended that a working group be set up to involve representatives from the sub-contract manufacturers, the warehouse operators and the store. The proposed e-business processes could be reviewed and an implementation programme established.

Shared Skills are keen to work closely with Java Snacks in the development of an E-business strategy and throughout the implementation. Our experience with EDI and XML Server, along with extensive exposure to SAP and our involvement in a number of EDI to E-business initiatives makes us a natural partner in the development of your E-business initiative.

