

“Internet-enabled e-commerce is changing economic models for businesses and driving companies to rethink the structure, business processes, and channel strategies that Enterprise Resource Planning (ERP) systems were designed and implemented to support. With the ensuing functional overhaul, the ERP market faces a dramatic technical shift in Internet-based applications. The underlying technology, design, and user interface need to adapt to support new values in the market. Companies are just beginning to take advantage of the Internet by dramatically reducing indirect purchasing cost through the consolidation of buying power and through use of the Internet’s cheaper transaction costs. Other companies are discovering the cost savings and increased customer satisfaction by extending self-service customer applications. AMR Research believes that these investments are just the beginning and that e-business will fundamentally change existing applications, technical infrastructure, and the entire enterprise. Like most companies, ERP vendors never anticipated the speed with which e-commerce has gone from a future project to a strategic imperative.”¹

This document will describe how most ERP vendors have attempted to address these new imperatives on top of their existing technology.

E-business with Navision Axapta – the value of an ERP backbone

Background – why is e-business important¹?

Let’s take a look at some of the reasons for expanding a company’s business into the virtual realm of the Internet. The most obvious ones are already documented by those companies taking the lead in this evolution: lower costs of doing business, faster time-to-market, and strengthened customer relationships. All of these add to a company’s competitive advantage.

Lower cost of doing business

The benefits of e-business are multiple and can be seen both in short-term and long-term perspectives. Many companies investing in e-business experience high Return-on-Investments with payback periods shorter than 12 months. These high ROIs stem from the reduced cost of conducting business over the Internet. Automating the administrative tasks also results in fewer errors and less repetitive work, freeing resources to focus on more value-added activities.

Faster time-to-market

All industries around the world are facing increased competitive pressures, with shorter market windows

¹ *The Report on Enterprise Applications*, by Rod Johnson, October 1999 © AMR Research, Inc.

and product life cycles. Bringing new products to market successfully requires optimal timing and effective communication processes, with seamless information flow to the distribution channel and the end-customers. Fast reactions to market conditions are critical – editing and changing products, pricing and configurations must happen fast to maintain a competitive edge. Think about how long it takes for a company to bring a new product to the marketplace and imagine what it would mean to be able to reduce the gap between product readiness and sales revenue generated by that new product.

Strengthen Customer Relationships

Another long-term business dimension brought by e-business is the opportunity to connect more closely with existing customers. With e-business, companies can serve customers better by providing up-to-date information on orders and products - available 24 hours a day. Providing information on the customer's order history, product availability, price calculations and delivery times online gives the customer all he needs to make the buying decision right away. This allows the customer to avoid useless waiting time while gaining the ability to manage and control his order process.

E-business offers the opportunity to customize the relationship with each customer by offering personalized services. The system can collect and utilize customer-specific information so the customer's

individual preferences and agreements are accounted for. It is much more cost-efficient to keep a present customer happy and even increase that business, than to bring in a new one.

Taking e-business even further – a paradigm shift under way

Market estimates indicate that Internet business between enterprises is about 10 times as high as business-to-consumer trade. 31% of U.S. businesses are trading over the Internet and that figure is expected to rise to more than 90% during 2001².

The next wave of evolution is already under way. In the future, businesses will be even more integrated across organizations by establishing virtual companies and interlinking supply chains electronically to achieve the benefits of tight integration to meet market demands faster and more efficiently. This concept, called "Business Community Integration", is when a company is extending its business processes to the outer world and even redefining processes to accommodate external partners such as customers and suppliers.

"The connections and interactions possible through collaboration and Business Community Integration (BCI) create a powerful opportunity to improve the performance of individual businesses and entire

² Source: Goldman, Sachs & Company

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industries. ERP vendors understand business processes best, and they must extend that expertise to support the execution of a business process between companies³.

ERP is the key to dealing with the world of change - still the heart of the company

Before a company can take advantage of the great opportunities in the virtual business world, the right platform must exist. The real benefits from e-business and Business Community Integration will only be realized when those solutions are built from the basis of a company's core enterprise resource planning (ERP) system, integrating all parts of the organization from R&D, procurement, manufacturing, logistics, service & support, order administration, sales & marketing, and finance. ERP software equips a company with access to high-quality business information and the ability to act based on professional analysis of the state of the business. Having a correct and timely picture of the current business is vital to exploit the new opportunities, open the doors to customers/suppliers, and expand the business across traditional organizational boundaries.

E-business – not “if”, but “how” to do it

One of the biggest strategic decisions today facing a company – whether large or small – is not *if* but *how*

³ *The Report on Enterprise Applications*, by Rod Johnson, October 1999 © AMR Research, Inc.

to enter into e-business. The 'how' must take into account the existing business and not hamper relationships with existing customers, dealers and suppliers. The 'how' must take into account the fact that there already is an existing infrastructure within a company, representing major investments from the past. The 'how' should also incorporate the whole competitive landscape and define where a company positions itself, for example, by inventing new strategic alliances across the business environment. The driver and motivator of this 'how-process' becomes a redefinition of a company's value proposition to its customers.

All companies are faced with this very strategic decision – to be made by the executive management and not isolated to the IT or sales and marketing department. The choices they make will be a determining factor for a company's business opportunities in the future. The investments made to execute the strategy should strengthen a company's competitive advantage and give the business the ability to grow and develop as the market opportunities expand and the scope of the new business era develops even further in the coming years.

Integration is critical when implementing a successful e-business strategy

Entering the world of e-business is not a decision that should be considered in isolation from the rest of a

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company's business processes. A company's e-business initiative should not be launched with a life of its own. It requires careful analysis and planning to establish the right foundation for an e-business solution.

According to AMR Research, a true e-business solution facilitates accurate delivery promises, enables overnight order fulfillment and allows real-time, self-service information, all of which require very tightly integrated business systems. At the same time, no one wants to invest in a totally separate solution which demands maintenance of redundant databases, applications and business logic, separate development tools, separate software platforms and so on. That's why the ERP software to build from must be open to the outside world, follow industry standards, and be easy to customize and scalable, regardless of which e-business strategy a company chooses to implement.

How to select an e-business solution?

Traditional ERP systems cover traditional business needs – finance, trade, inventory, production, human resources, administration, etc. With e-business being widely accepted as the “next step”, most ERP vendors now offer e-business solutions: either solutions built for the specific ERP system, or third party solutions, that are packaged together with the ERP system.

When selecting an e-business solution, functionality is of course important. Do you want to serve customers, suppliers or employees via the Internet? Most start with one of these, planning to add on in the future.

However, evolution is so fast right now that the underlying technology is equally – if not more – important than functionality, to enable you to take advantage of what the very near future brings. The important role of the right technology is explained below.

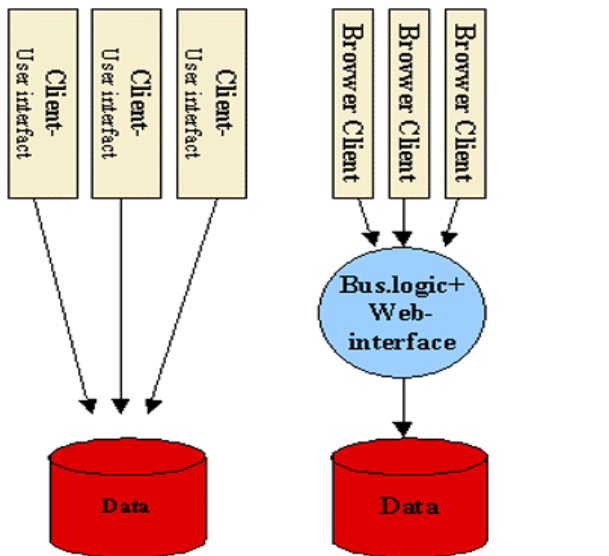
The risks of poor integration

When ERP vendors add e-business applications on top of an existing ERP solution by making “add-ons” in different directions, not really integrating them, there is high risk of:

- High costs
- High degree of maintenance
- Redundant data
- More than one development tool
- More than one database
- Lack of flexibility
- Lack of adaptability

As a natural development, e-business solutions often start at the customer level – web-shops, trading and selling goods via the Internet, etc. In the example below, you see a traditional ERP system with a number of Windows clients connecting to the database. The term ‘business logic’ means the rules

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Traditional ERP systems with e-business add-on

and calculations contained in the application, which is often placed on the client. This is usually referred to as 2-tier client/server architecture with so-called 'fat' clients. The business logic is, for example, special discounts and trade agreements a customer may have, how to convert units of measurement on inventory items (e.g. when storing items by weight and selling them in pieces), or suggesting the best inventory location for incoming items.

When adding an e-business solution to the ERP system, a separate database is often set up. Since the Internet puts different requirements on the solutions running through a browser, the development tools used to create the e-business solution are most often different from the tools used to create the ERP system. This setup means maintaining two separate systems, and two databases - by means of two different development environments.

Future changes to the e-business solution

Even though upgrading any software to a new version always introduces the risk of some problems, it will certainly create even more problems when changing to a completely different system. This is why you always must consider the upgrade options that follow with a software system – ERP, e-business or any other software.

When the e-business solution is made on top of the ERP system by the same software vendor, you are ensured synergy between the two systems, and you only have to deal with a single vendor. In the case where the ERP vendor has bought a third party e-business solution and packaged it together with their ERP system, you do have two different systems, but with the vendor's assurance of the two systems working together. The most extreme scenario is the one where you buy the ERP and e-business solutions from two different software vendors and rely on consultants or your own IT staff to integrate the two.

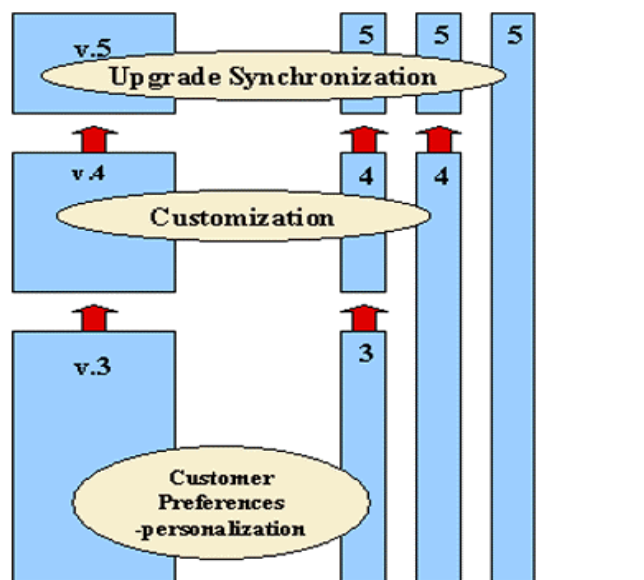
Illustrated below are areas of concern that apply to all of the abovementioned cases. On the left-hand side is the ERP system. It comes out in version 3 with an e-business solution, e.g. a web-shop for customers (first column on the right hand side). At some point, the ERP system needs to be upgraded to version 4. With version 4, the e-business solution probably also needs to be upgraded, and the vendor now introduces a new e-business solution, maybe a supplier-facing Internet

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application. With version 5, you see the same scenario: an upgrade of the ERP system and the two existing e-business solutions, this time maybe adding an employee-facing Internet application. Let us consider the problems inherent in these scenarios.

Personalization

With internationalization an innate characteristic of the web, companies now face diverse requirements for different currencies, date formats, and languages. A large percentage of contents on the web are in English and many Internet users speak English, but research shows that the majority of new users do not speak English. In addition, most users today are now accustomed to the new software norms of screen and menu personalization. This is another matter to take into consideration for your website capabilities. Your ERP system and e-business solutions ideally should be able to cope with these changing demands.



Complications in upgrading an ERP system with "add on" e-business solutions.

Customizations and upgrade synchronization

There are a large number of very sound arguments for selecting a standard ERP package. However, this choice almost always implies the need for at least some customizations. When looking at any e-business solutions, the need for customizations very likely will exist to varying degrees. Since this area is so new, there are still no "best practices" agreed upon, and every company wants their solution to carry their individual look.

Not all ERP systems support customizations very well. So when you select an e-business solution separate from your ERP system, this potential problem grows exponentially over time. First of all, you must make sure that both the ERP system and the e-business solution are customizable. Next, you have to consider the development tools needed to customize the two applications – are they the same, or do customizations require two separate sets of tools for ERP and e- customizations? In the case where your ERP and e-solutions come from different vendors, you need to consider how future upgrades will affect customizations in either one of the two.

Finally, you must consider your ability to add new e-applications in the future – wherever your future strategy in this area will lead you. Will it mean starting again from scratch, re-coding the existing ERP business logic? It is clear there are many potential

problems in synchronization of upgrading these systems.

A solid strategy for e-business

Companies today should only invest in an IT system if it supports their fundamental business model and future strategy. Standardization, simplification of processes, adaptability to the changes of business, and scalability are all key elements of a successful IT implementation strategy. Your company needs an IT platform for future developments, which can grow with your needs and enable you to take advantage of new movements in the marketplace. When the market changes, reaction time is vital. Back-office excellence is the foundation of a strong and dependable front-end e-business strategy.

Windows and web: ERP and e-business in one integrated solution

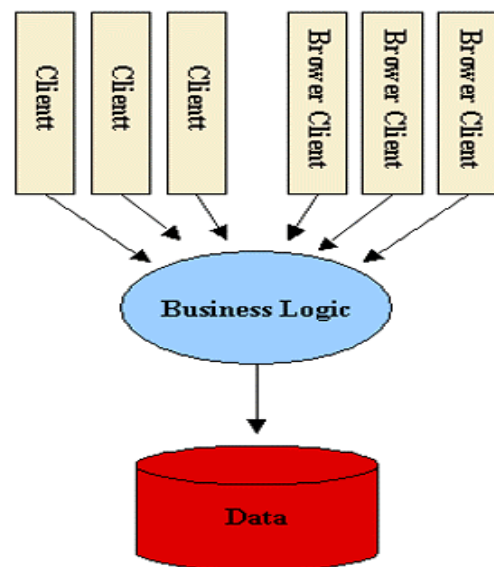
Navision Axapta was designed from its inception as an integrated enterprise solution with the Internet and the new business world in mind. It is a truly integrated solution with the Windows and Web applications existing on the same foundation with the same business logic. This provides:

- Lower costs
- Lower maintenance
- No redundant data
- No redundant business logic
- Only one development tool
- One database

- Very high flexibility
- Adaptability

From within the Navision Axapta toolbox – the MorphX® Development Suite – you can define and setup a website, including graphical design, selection of data to present, security setup etc. The web-client is just another way to access Navision Axapta, and users can log on right away.

Navision Axapta connects from Internet applications to the database THROUGH the business logic in the system. This means no need to develop the logic again in future scenarios. Example: Trade agreements can typically be found not as data in the database, but as formulas that are calculated each time a specific form is opened. This is business logic from the backbone ERP system, automatically included when developing front-end web-applications in Axapta.



Navision Axapta 2.1 uses the same business logic for the Windows application and the Web application.

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Personalization

Navision Axapta handles different currencies, date formats, and languages. Language and currency can be changed on the fly – chosen by the user logging in to your website. This welcomes every single user of your website in his or her preferred language, and when showing the history of each customer's orders – whether entered via the Internet or via traditional means. Under the security setup, the user also can verify and correct the information stored about him in the ERP system, such as address and phone. This puts the customer in charge of his own data, which improves the data quality in your ERP system and means less maintenance for you.

Customizations and upgrades

Because the business logic in Navision Axapta is isolated from both the database and the client, customizations to the ERP solution also are reflected in the e-part of the solution. Customizations can be made by an authorized Navision Business Partner – or by your own IT staff. Even customizations that might need to be treated differently in the two client interfaces are conducted highly efficiently since the same set of tools is used for your ERP and e-customizations.

Due to the Navision Axapta component-based architecture, upgrades to new versions are performed seamlessly. Traditionally, customizations have caused many problems in upgrade situations, but with

Navision Axapta, the tailored changes are automatically carried along in the transition.

E-business is a completely integrated part of Navision Axapta. Therefore, synchronization is not an issue in upgrades of the ERP and e-business solutions. This means tremendous savings in resources and time, compared to the scenarios described earlier.

These features ensure you an ERP system and e-business applications combined in one solution, which provides you with the freedom to change your systems as your strategic direction is adjusted in the future.

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