

**2261 Gascoyne / 2262 Schulman on Internet Strategy
Developing a Global Web Initiative**

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Executive Summary

Most websites on the Internet are designed in English, and are targeted to English speaking users. While membership on the “World Wide Web” implies global exposure, more often than not, website designers fail to tailor their presentations to a local or regional audience. If a company’s goal is to establish a truly global presence on the Web, it is essential to formulate a strategy whereby information is universally available and transactions are commutable from any major currency. Adapting to trends in customer service and software integration concepts is also crucial to success. Since the mid-1990s, the Internet has transformed itself from an e-commerce, “click and mortar” environment to an “e-business” one, redefining the company model to fully integrate the Web with the traditional marketing and transactional channels. This paper provides insight on developing a successful global e-business strategy.

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Introduction

Welcome to the Internet Age. Few concepts have revolutionized business more intensely than e-commerce. The streamlining of interactions, products, and payments from customers to companies, and from companies to suppliers, is causing a major upheaval in corporate boardrooms. Managers today are being forced to reexamine traditional definitions of value, competition and service. This is especially difficult in light of the perception that many corporate officers have of past information technology (IT) projects.

For example, in 1995, thirty-one percent of U.S. IT projects (about 80,000 of them) were cancelled prior to completion, costing \$81 billion. Only sixty-one percent of all business functionality anticipated in IT systems was actually delivered in the first release. Executives polled in 1995 considered only thirteen percent of all IT projects to be successful. Finally, over 50 percent of all systems projects exceed their cost estimates by 189 percent or more, costing U.S. businesses \$59 billion per year.¹

Obviously, the more ambitious the Internet project, the harder it is to garner the necessary confidence and budgets to be successful. IT Managers must, therefore, use past failures to gain understanding resulting in future improvements to job estimating and functional analysis processes. Failures can also be addressed through more flexible systems, internal technology core competence, and closer integration of business units.² Competing in global cyberspace is a fierce undertaking, requiring a whole new mindset and business culture. This new culture necessitates the empowerment of IT departments to participate in the strategic planning for Web projects. In other words, if technology is a "business enabler," technologists must be given the liberty to brainstorm new approaches to online problems. However, such thinking cannot happen in a vacuum. The desire to compete, and the resulting commitment to change, must start at the top.

To compete effectively in the online world, a company must structurally transform its internal foundation. This structural change requires the development of an innovative e-business strategy, focusing on speed to market, breakthrough execution, and large-scale process changes, reducing variation and hand-offs while providing single-point-of-contact problem resolution. Simultaneously,

¹ Jim Johnson, January 1995. "CHAOS: The Dollar Drain of IT Project Failures" (Application Development Trends)

² Richard J. Gascoyne and Koray Ozcubukcu, 1997. "Corporate Internet Planning Guide: Aligning Internet Strategy with Business Goals" (John Wiley & Sons, Inc., New York, NY), p. 271.

companies must develop a potent e-business infrastructure oriented toward continuous service improvement and perpetual innovation.

A core component of successful e-business practice is assessing and redesigning how the firm provides value to its customers. Since a growing percentage of customers reside on foreign shores, e-business managers must adapt their presentations, marketing and distribution schemes to accommodate the global environment. This adaptation includes the provision of multi-language information, multi-currency transaction capabilities, and culturally sensitive marketing.

This course paper offers suggestions on building an e-business strategic plan, some applicable to all businesses, some more appropriate to larger companies, with special emphasis on global e-business concepts.

The course texts underlying this paper are, *Corporate Internet Planning Guide: Aligning Internet Strategy with Business Goals*,³ by Richard J. Gascoyne and Koray Ozcubukcu, and *The Internet Strategic Plan: a step-by-step guide to connecting your company*,⁴ by Martin A. Schulman and Rick Smith. Since these texts are five years' outdated in some respects, additional material was included from (global) Internet sources and from more recent works, most importantly, *e-Business 2.0: Roadmap for Success*,⁵ by Dr. Ravi Kalakota and Marcia Robinson (see References section).

A prerequisite to developing an Internet strategy is understanding the evolution of e-commerce and current trends that redefine its focus.

³ 1997, John Wiley & Sons, Inc., New York.

⁴ 1997, John Wiley & Sons, Inc., New York.

⁵ 2001, Addison-Wesley, New York.

e-Business Trends

In 1994, e-commerce was considered by some to be an “economic solvent,” dissolving old business models, changing cost structures, and rearranging links among buyers and sellers. Hindsight now clearly proves that e-commerce is a “relationship solvent” as well, dissolving boundaries between companies, their partners, and their customers. It is also a “geographic solvent,” eliminating boundaries between nations. While conspiracy theorists were alarming citizens with warnings of shadow governments and the “New World Order,” the Internet quietly evolved into a “New World Online.”

According to Ravi Kalakota, PhD, and Marcia Robinson,⁶ the impact of e-commerce has been manifested in distinct phases. The first phase (1994-1997) was “presence:” making sure everybody had a website, meeting the demand that every company have at least something on the Internet even if there was no specific business reason to do so. The second phase (1997-2000) emphasized “transactions:” buying and selling over digital media, and matching buyers and sellers who never would have found each other without the Internet. Unfortunately, the predominant strategy during this phase was the “why-sell-it-when-you-can-give-it-away” business model, and many of the first movers have since drowned in a sea of red ink.

Since 2000, we have transitioned to the third phase, which focuses on using the Internet to impact profitability, not by increasing gross revenues but by increasing gross margins. This phase could be called “e-Business,” since it requires an integration of many traditional disciplines and new technologies, taking companies far beyond the e-commerce buying and selling model by including all the applications and processes enabling a company to service a business transaction. The bottom line in this third phase is maximizing customer value and profits.

The question is: how does a company realize this bottom line? By redefining the rules by which the Internet is employed as a profit center. Rather than technology being classified as the Rodney Dangerfield⁷ of business, it must now be fully integrated with other disciplines and play a major role in the overall business strategy. The good news is that the rules have evolved since 1994 as well, and they reflect the trends toward a sound e-business model.

The Rules of e-Business

According to Kalakota and Robinson,⁸ the top ten rules that define today’s successful Internet strategic planning also require that management alter its perception of the role that e-business plays in their corporate culture. The table below summarizes these rules.

⁶ e-Business 2.0, pp. 4-5.

⁷ “No Respect”

⁸ e-Business 2.0, pp. 6-31.

Table 1. Ten Rules of e-Business

Rule 1	Technology is no longer an afterthought in forming business strategy but rather the cause and driver.
Rule 2	Streamlining the structure of information and influencing and controlling its flow is a dramatically more powerful and cost-effective service than moving and manufacturing physical products.
Rule 3	Inability to overthrow the dominant, outdated business design often leads to business failure.
Rule 4	Using e-commerce, companies can listen to their customers and become “the cheapest,” “the most familiar,” or “the best.”
Rule 5	Don’t use technology just to create the product. Use technology to innovate, entertain, and enhance the entire experience surrounding the product from selecting and ordering to receiving and service.
Rule 6	The business design of the future increasingly uses re-configurable e-business models to best meet customers’ needs.
Rule 7	The goal of new business designs is for companies to create flexible outsourcing alliances that not only off-load costs but also make customers ecstatic.
Rule 8	For urgent e-business projects, it’s easy to minimize application infrastructure needs and to focus on the glitzy front-end apps. The oversight can be costly more ways than one.
Rule 9	The ability to plan an e-business infrastructure swiftly and to implement it ruthlessly are key to success.
Rule 10	The tough task for management is to align business strategies, processes, and applications quickly, correctly, and all at once.
SOURCE: e-Business 2.0	

From these rules, we could conclude that, to implement a successful e-business strategy, strong leadership is imperative. Take *Rule 1* for example. If any entity in the value chain begins doing business online, companies up and down the value chain must follow suit or risk being substituted or excluded from the chain’s transactions. Thus, maintaining the status quo is not a viable option. All associated businesses must co-manage the value chain, ensuring unbreakable links between buyers, sellers, products and services.

To follow the rules and stay with the trends, strong managers must ask some key questions about their current infrastructure. They will find that, in many cases, the existing value chain will need to be “disaggregated” by identifying, valuing and nurturing the true core of the business – the underlying customer needs the business intends to satisfy. Then, management may be required to “re-aggregate” the core disciplines by reorienting the business toward a new vision of the needs it serves, thus streamlining the entire value chain. Some of the questions to be answered are:⁹

1. *What is the new industry structure?* The answer will challenge the traditional definitions of value.

⁹ e-Business 2.0, pp. 11-12.

2. *What does the digital customer want?* Customers want value defined in terms of the whole customer experience and related expectations.
3. *What are the new economics?* Businesses must find ways to convert value creation into revenue and to engineer the end-to-end value stream.
4. *How do we reorganize our business?* By creating the right partnerships.
5. *Where is the value?* Value is in integration and in creating a new techno-enterprise foundation designed to support customer needs.
6. *How do we implement change?* By developing a new generation of leaders who understand how to create the digital future by design and intent, not by accident.

Internet trends indicate that businesses must challenge the traditional definitions of value. For example, customers expect companies with which they do business to continuously improve, especially in four areas: speed of service, convenience, personalization, and price. In a nutshell, online service can never be too fast, customers value the convenience of one-stop shopping and service integration, customers want firms to treat them as individuals (in their language and with their currency), and customers will flock to companies that offer unique services for a reasonable price.

Another tenet that must be challenged is the concept of separate best-of-breed applications employed along the value chain. In the new e-business model, application integration is the key. For example, if a sale comes into the company from its website, the Web application must trigger the appropriate responses in the company's sales, accounting, inventory management, and distribution applications. This is not as easy as it sounds – it often requires a complete overhaul of the system and, possibly, the core business processes. Since most firms still do not have fully integrated front-end/back-end infrastructures, an interim solution can be middleware designed to provide the proper interfaces between the Web servers and the legacy systems. Sooner or later, the demand for efficiency and online performance will force companies to integrate their systems.

Customer Trends

According to *Business Week*,¹⁰ customers are driving most trends affecting a global e-business strategy. First and foremost among customers is faster service. Since only a fraction of online customers have broadband access, websites must be designed from ground-up for speed of execution. Time is money. The message to business managers is clear, and well stated by Kalakota and Robinson:

¹⁰ "Trend-Spotting Anyone Can Play," (Business Week, March 2.1998)

“To succeed, companies must reduce the processing time of search, selection, order entry, and order fulfillment. Delays at any step of the process are unacceptable!”¹¹

In other words, e-business applications must cut the time customers wait for service, or the company will be penalized by customers for infringing on their time. If the company does not expedite its processes, customers will jump ship and find a company that does. Very often, the physical speed of the website hardware isn't the problem, but the number of hand-offs to other vendors in the value chain. Managers must be focused on integrating and expediting every step in the customer's online experience.

The next customer trend is self-empowerment. Customers are looking for self-service solutions to provide information, products and services 365 days per year, anytime day or night. Like Wal-Mart is to retail (self-service and inexpensive), e-business sites must be to the Internet. In other words, e-business should be user-centric, not technology-centric. The customer's total experience should be designed with the following in mind:¹²

- Emphasize simplicity by focusing each interaction on one goal and removing distracting clutter; and
- Eliminate experience inhibitors, such as Web pages that load slowly, error messages during the buying process that confuse rather than enlighten, or product listings that are not available or in stock.

The next concern for managers is the personalization of websites. As consumer power increases, attention span decreases. Products and services should be targeted to the needs of the particular customer who is accessing the site, and every related product and service should be made available from a single source. Consumers, especially in America, seem to love one-stop locations that offer everything under one roof. Huge mega-malls are the retail equivalent. Once online, customers want the e-business experience to offer the same mega-mall conveniences.

Further considerations must include the needs of customers outside the hosting country. If the intent is to market products and services globally, the e-business solution must include both “language personalization” and “currency personalization.” In other words, no matter where the customer accesses the website, he or she should be able to do business in the native tongue, using the native currency, to buy the products and services listed specifically for that customer.

For example, of the 320-plus billion Web pages on the Internet, 68.4 percent of the content is presently in English. Of the entire global online market, however, 59.8 percent of users are non-English speakers.¹³ See the problem? Managers

¹¹ e-Business 2.0, p. 38.

¹² e-Business 2.0, p. 41.

¹³ Source: Global-Reach.biz

tasked with the development of successful global e-business enterprises must fully understand the needs of the global market and personalize the online experience accordingly.

Service Trends

Several studies document that the average company loses half its customers every five years and that it costs five to ten times as much to obtain a new customer as to keep an existing one. Businesses can improve their customer retention by developing and managing customer relationships through integration and new technology. The concept of customization and integration of sales and service is the key. A “one size fits all” model will not work. Sales and service must be tailored to each customer. Sounds simple, but it’s not.

Since customer relationships are the key to business growth, companies must focus their energy on every aspect of customer satisfaction, from “want it” to “buy it” to “use it” to “fix it” to “return it.” Companies must, therefore, learn and track customer needs, behaviors, and lifestyles and then use the information to provide specific value to the customer. Such a strategy will build the correct relationship and will result in customer loyalty.

Once loyalty is secured, additional revenues and profits can be generated through cross-selling and up-selling activities, which should be a part of the overall service provided to the customer. It’s the “Home Depot” syndrome, where the business blurs the lines between sales and services before, during, and after the sale. Thus, a successful e-business must provide service before the sale and during every interaction with existing and prospective customers.

Another service trend is the need for seamless support, which offers consistent and reliable customer service. In many cases, companies hand-off support to departments (or other companies) which have no knowledge of the purchase experience the customer has already endured. This often results in a “not our problem” response. The efficiency of single-point-of-contact service has been proven by the top corporations in America. Essentially, a customer can go to one place, or person, to solve every issue related to their relationship with the business.

Not only do customers want their online experience to be swift, they also want the products they purchase to be delivered quickly by a destination-sensitive carrier. As consumer-direct sales grows exponentially, flexible fulfillment methods (such as home delivery) continue to gain importance. A related sub-trend lies in increased process visibility, or the online tracking of shipments. Customers wish to know the status of their orders and the estimated time of arrival of their packages. The FedEx and UPS models work well with this visibility, and companies should emulate these models to provide online order processing status *prior* to shipment as well.

Enterprise Trends

The Internet is not the only channel through which customers conduct business. Besides the trip to the store or the telephone, customers use direct dial-up,

interactive voice response (IVR) and wireless connections to transact business or access information. Service integration, therefore, requires standardized high-quality customer service across every channel media. The message received from one channel should be identical to the messages from any other channel. Enterprise integration should also be seamless. This is more of a management problem than it is a technological one. The “service culture” of the business should be replicated in every department. To maintain the company’s competitive advantage, multi-channel integration is of critical importance.

Of course, such integration is often difficult, especially if the business is reluctant to replace existing legacy systems. Enter: middleware. To meet business and technology integration mandates, the use of middleware often makes financial sense. It can be employed as an interim solution while fully-integrated systems are being developed, or it can be used to preserve and interface the old applications while still providing a satisfactory customer experience.

New Technology Trends

We are quickly heading toward a business environment that is wireless, personal, and integrated. The convenience of wireless and the decreasing costs of cellular and digital networks make this trend inevitable. As wireless broadband improves, speech recognition and natural language interfaces will make the user experience more personal and more secure. The ubiquitous desktop computer will, in time, be replaced by online applications accessed via wireless handheld PCs and “wearable” computers. Collectively, this trend enables “m-commerce,” or “mobile commerce,” and is dependent upon the following technologies:

- Higher access speed, more storage, and more applications.
- Integrated devices, including wireless phone, Web browser, personal messaging, and data organization bundles.
- Wireless personal-area networks, which allows connection to peripheral devices (i.e., BlueTooth™) and to enterprise networks.

As businesses require quicker decision-making processes and instant information from wherever employees are located, the demand for m-commerce solutions will be tremendous. The modern, integrated, multi-channel e-business will adapt to, and adopt, these technologies to be competitive.

Trend Commonalities

Spotting trends and capitalizing on them early is the type of innovation that keeps a business competitive. The trends listed previously appear to have at least four things in common.¹⁴

- Convenience – they directly impact customer self-service, ease of use, and personalization;

¹⁴ e-Business 2.0, p. 64.

- Effectiveness – they directly impact the relationship between customers and the company’s environment;
- Efficiency – they impact the internal structure and operating activities of the enterprise; and
- Integration – they make a strong case for one-stop-shopping consolidation.

In some cases, companies will be required to restructure or renovate the existing business environment in order to capitalize on these trends. In other cases, the task will be more dramatic, including the creation of entirely new companies to compete head-to-head with small, nimble innovators.

As a manager with a global e-business mandate, what is your strategy to make the online customer experience seem “local” and personal while supporting a global marketplace?

The answer is twofold: first, your website must be built from the ground up with customer-centric personalization in mind; second, your website must be integrated with all applications that support the value chain. Yes, there are many “baby steps” that must be taken to achieve these objectives, but the overall design must have boardroom buy-in and be driven from the top-down. Then, and only then, should the technological issues be resolved. In other words, a new customer service culture must be developed up and down the value chain, followed by the development of the applications designed to drive and support that culture.

The customer’s first impression is very important, and that impression will be negative if the website doesn’t speak the customer’s language. In the next section, we will discuss the language aspects of “localizing” each customer’s online experience.

Localizing Global e-Business

Global connectivity, available at speed and at low cost, is the most fundamental strength of the Internet, but only now are companies grasping the full implications of that connectivity. Businesses have realized that, to maximize profits, they must reach out to international markets. At first the Internet in itself was seen as an international marketing tool and companies published websites solely in English, hoping that customers around the world would come calling. But, as Phil Scanlan, of localization specialist *Worldlingo* explains:

“The hard data is that only about fifty per cent of people on the Internet speak English. In three years time, English speakers will make up less than one third of the Internet population. Businesses must be aware that a customer is four times as likely to stay longer on a site and purchase goods or services if it is in their native language. Localisation ups traffic. You can't sell to someone unless you speak their language. That would be true if I were face-to-face with someone, so why should it be any different on the Internet?”¹⁵

According to Stefan Lampert,¹⁶ customizing content to foreign markets - referred to as localization - often does not include translation, however, local language is becoming an increasingly important issue. As the Web becomes more popular among emerging societies, English will no longer suffice as a universal language for countries representing a smaller market. The desire to project a “local identity” will make local users in many regions of the world less likely to accept content that is not provided in their preferred language. Mr. Lampert reflects:

“These days, most multinational companies seem to think globalization means selling in major global markets with few links among national operations. However, the Web is likely to promote a different view of successful global companies in which being truly global is much more dependent on a company's ability to communicate and manage information across borders than with worldwide sales.”¹⁷

Michael Anobile, managing director of the *Localisation Industry Standards Association* (LISA), has written extensively on the issues and strategies associated with global Internet marketing. He summarizes some of the challenges to localization by citing the FedEx example:

“If you look at a site like Fedex.com, which has significant global branding, they want to walk you through the services available, but change the continuity of the site according to where it is being accessed from. The picture of a woman that you see on the home page if you access it from Egypt is different [from] the image of a man at a desk that you see if you are in the US. Cultural sensitivity goes

¹⁵ Phil Scanlon, quoted by Michael Anobile, May 2001. "How to globalise web content effectively" (e-strategy international)

¹⁶ Stefan Lampert, May 2001. "A Global Web Strategy for Local Markets" (e-strategy international)

¹⁷ Ibid, Lampert.

down even to the choice of colour scheme that you make, as colours have different cultural associations in different countries.”¹⁸

While many website managers have given thought to the language issue, very few have considered localized colors. The proof is out there for anyone to see. For example, look at websites created by Brazilians for markets in Brazil and you will see predominantly green and yellow color schemes, representative of their nation’s flag. In America, the most popular marketing colors are red, white and blue. How effective can an American company be in Brazil if its website is predominantly red, white and blue? Of course, that’s a rhetorical question!

Changing Focus

The focus of the industry is now migrating to content flows, hosted applications, databases and knowledge bases. Simultaneously, the value chain, and hence the opportunities for revenue, have expanded significantly and now typically include translation management, multilingual content management, global fulfillment and other global processes. All of these technologies are becoming part of a total global solution that gives clients enterprise scale, the full ability to leverage their translation investment through integrated enterprise functions, significantly reducing translation costs.

Therefore, the focus has shifted from the technical side to the human side. The ultimate goal is for a user to be able to log on to a site generated in a foreign country and see it as if it had been developed in their hometown. This requires input from experts who understand the shifting cultural, political and social references of the economies being targeted in the early stages of development of a website.

Localization is reaching a stage that sets it apart from many other areas of Internet development. While the focus for so many systems developers has been to automate as many processes as possible, taking human input out of the loop, issues of language and culture do not fit neatly into a system. There is no algorithm that can take into account the changing political and social scene in any given country. Even the best software language translators fail to recognize current slang and regional vernacular.

Cultural sensitivity is a crucial factor if a company really wants to maximize its global revenue feeds. The translation of content into the local language means nothing if the imagery, color scheme, or political slant of the site has not been adapted to local standards. Some companies have even found that a lack of cultural sensitivity can undo all of the hard work that has gone into translation. The only way to avoid such mistakes is to think ahead and make sure that there is some local expertise on board. In most cases, both technological and cultural consultants should be brought into the loop in order to ensure that the “local” online experience with the website is appropriate.

¹⁸ Michael Anobile, May 2001. "How to globalise web content effectively" (estrategy international)

Techno-hurdles

While most technological obstacles have been addressed in the industry, language translation raises issues that make it difficult even for experts to resolve for localized website presentations.

The two most important of these issues relate to the way different languages are presented on-screen. For example, sounds or words that would be represented as a single character in English, or a language that uses the same modern Roman alphabet, are often represented by two characters in Chinese and other languages that use symbols unconnected to that alphabet. Another issue, exemplified by Arabic, is that of bi-directional representation. Although the words read from right to left, numbers read from left to right. Thus any translation system needs to be able to switch directions for the appropriate content.

Beyond these linguistic issues, the other major stumbling block for localization solutions, and Internet applications in general, has been the diversity of IT systems that exist around the world. The integration of these diverse systems is thus being looked at very closely, and there are many global efforts backed by leading players who are working on common standards, such as XML (eXtensible Markup Language).

The bridging of the technology gap and the focus on services is starting to attract new service providers into the localization industry. The market is still in its infancy in many respects, but is set to grow rapidly as more big players turn their eyes to a potentially profitable niche. Mr. Anobile puts it in perspective:

“Think back 3000 years. Suddenly someone invents the stirrup and someone invents the longbow. Then you put a bowman on a horse and he is unstoppable. You are leveraging the potential of your new inventions. It's the same in our industry with the new technological developments. It's not about who has what, it's about who is taking advantage of what they have. ...There are more companies moving into the technology side, but the software is not providing any magic. The big players like the [localization] industry because it offers them a ten to one return on investment.”¹⁹

The Future of Localization

Competition and the availability of expertise will fuel new extremes in website localization. Organizations like LISA are already working closely with universities to develop courses in localization, which bring together the oft-alienated fields of technology and language. Just understanding the technological side of Internet design will not be enough.

Further, the strategy of “micro-localization” will become the norm because regional differences do not apply only at international borders. There are vast variations in social and political attitudes between regions within countries and even within towns and cities. An example would be local sports teams.

¹⁹ Ibid, Anobile.

Inhabitants of different towns are accustomed to seeing certain colors that they associate with their favorite sports teams, so using those colors on a website will have more leverage with those customers. The extent to which localization can be refined and focused is limited only by the amount of detail a website generator has about a customer's precise location.

As we have discussed, trends toward seamless integration of online processes, added to detailed localization efforts, will help e-businesses attain the goal of giving customers a website that *appears* to have been developed locally.

e-Business Transaction Automation

The “time-space continuum” in which industries reduce their time-to-market for products and services, is an order of magnitude slower than “Web time to market.” To win the Internet race, businesses must recognize the rate of change in the Web economy and be willing to evolve in real-time as the needs of online customers change.

This constant requirement for change has caused headaches among the best Internet software developers. Today, e-businesses must react much faster than traditional software development procedures allow, to implement robust, fully tested, sound business models. In other words, Web development teams must *architect* systems from the ground up to deliver maximum flexibility. One way to accomplish this is to design a meta-modeling layer for the business rules that govern the e-business.

Modularity

Many companies have found that the most efficient and effective way to deliver flexibility is to design their systems in a modular fashion, allowing for as much component re-use as possible. The benefits of this approach are obvious - modular systems are almost by definition adaptable systems. Reusing code for the bare bones of applications obviously saves on development time, testing time, and adds reliability. The modular approach can also be the foundation of the localized, or personalized, online systems discussed earlier.

The old ways of developing software and creating Web applications are no longer viable. It used to be that nine months was considered a “quick” turnaround for a software project. Today, the Internet seems to reinvent itself every month or so, rendering traditional software obsolete before it’s released. Thus, modular design, while a vast improvement, is not enough. Businesses must take development to the next level.

e-Business Rules

Web software must provide complete and continual flexibility without an army of coders constantly “tweaking” it. An innovative approach to this problem is to develop an environment within which a company can create a set of ever-changing business rules,²⁰ without adapting the underlying software. The concept is simple. Rather than rewriting, say, Microsoft Office each time user preferences change, we bring up an “Options” window and change the “business rules” of the software to suit our tastes.

This concept can be applied to e-business software by eliminating the un-stated assumptions, traditionally buried among thousands of lines of “spaghetti-code,” and managing them as easily-modified, parameterized business rules that “drive” the applications. This allows the same applications to deliver an ever-changing

²⁰ Business Rule: a statement or policy that defines or constrains some aspect of the business, or asserts business structure, or controls or influences the behavior of the business.

set of rules, dynamically helping those applications reach the market in “Web time.” A new catch-phrase representing this technique is “e-business transaction automation,” or ETA. E-Strategy International’s Jim Banks described ETA as follows:

“ETA systems aim to simplify not only the specification of a business rule in programming terms for the business manager; they also help the programmer or developer to quickly translate the rule into programming code. This is the breakthrough technology for the building, development and evolution of complex B2B web-based applications. ... With true ETA, ...it is possible to design, test and perfect new applications, almost without developing any new code. These applications can then be updated, without the risk of interfering with the operations of other parts of the application.”²¹

A study by the *Giga Information Group*²² estimates that the techniques employed by rules-based platforms reduce the coding phase of the application development life cycle by between 33 and 50 percent. These savings are substantial, particularly when compared to conventional development techniques. Moreover, most applications employing business rules will be easier and less expensive to maintain because changes are easier.

Before the invention of ETA, most design and evolutionary work on e-business software was coded by hand. Today, the ETA layer can manage all the complex interactions between diverse systems, applying the appropriate business rules while handshaking the various technologies in the chain. In other words, ETA resides between content management and personalization systems; and between the middleware and the back-end integration layers.

Business rule engines are designed based on the volume of transactions affected by each rule. Thus, as each rule is isolated and implemented, a greater transaction volume is possible. Rather than constantly tweaking the underlying code, ETA developers can spend their time on the rule engine and exception-handling layers, while management is free to “tweak” their business rules – all without major changes to the front-end applications.

Thus, the primary benefit of ETA to the future of e-business is that ETA can better enable the online exchange of goods and services. In other words, enterprises can use the Internet as the medium to transfer their business model by using the Web for procurement and other business processes, supported by the integration of Web front-end applications with internal systems and processes that are predisposed to follow the current business rules.

²¹ Jim Banks, May 2001. “E-business transaction automation” (E-Strategy International)

²² Giga Information Group (www.gigaweb.com)

e-Business Development Tactics

Current e-business trends demand fast turnaround of online projects. The financial cost of delayed or mismanaged Web projects is huge, but is dwarfed by the costs of lost opportunities when companies are late to market. Companies can get their product to market faster and with a competitive edge with a simple yet underused strategy: implementation of e-business programs developed with a tactical mindset. The examples of non-tactical execution failures are legion, but there are a few standouts.

Kmart, for instance, has recently illustrated the results of poor execution. While the company's recent stock price is the ultimate scoring system, *Kmart* is no stranger to failed strategies and poor Internet tactics. The company has tried its hand at e-commerce three times since 1995, but its sites were abandoned before they made much of an impact. *Kmart's* latest tactical blunder was Bluelight.com, a reference to its old in-store impulse-buying "blue-light specials." In addition to offering more products on the Web than it could possibly offer in-store, Bluelight.com offered free Internet service, travel service and financial services. In other words, the company attempted to launch business channels outside of its expertise, and was unable to compete with successfully implemented sites.

One could say that *Kmart* is long on vision but short on tactical execution and the ability to achieve customer adoption. What *Kmart* chronically fails to understand is the changing nature of e-business execution, which requires well-integrated processes, including order entry, order management, fulfillment and customer service. These processes are built upon software and properly implemented business rules, not traditional foundations of people and brick-and-mortar policies.

A company's vision and e-business strategy must define *why* a company chooses a specific e-business direction and *what* that direction will be. This becomes an "e-blueprint" which defines *how* and *when* the company's strategy will become a business reality and *who* is responsible for successfully completing the e-business initiative, and *where* within the company the initiative will be carried out. However, the difference between an industry leader and an industry follower is the *tactical execution* of the e-blueprint.

Tactical Execution

Building global enterprise-scale e-business applications is very difficult, but necessary. The risks are high: if you do not plan and execute properly, you risk killing the project and, quite possibly, the company. According to Kalakota and Robinson, to succeed, e-business tactical execution must carefully manage five components.²³

- *e-Project management* – including project oversight, product management, and software version and release management. e-Project management

²³ e-Business 2.0, pp. 465-466.

ensures that the goals of the project(s) are clear, valid, widely understood, and shared.

- *e-Development* – addresses the rapid software development methodologies available to speed up software implementation.
- *e-Infostructure* management – focuses on the production capabilities required by the project(s), such as software and process scalability and reliability, outsourcing via application service providers (ASPs), hosting, storage, and security.
- *Adoption management* – addresses change or transition management.
- *Performance measurement* – discusses the tools and metrics used to quantify e-business project success. Performance measures help monitor real progress, set benchmarks for continuous improvement, and establish key performance indicators to ensure accountability.

Figure 1. Elements of Tactical Execution

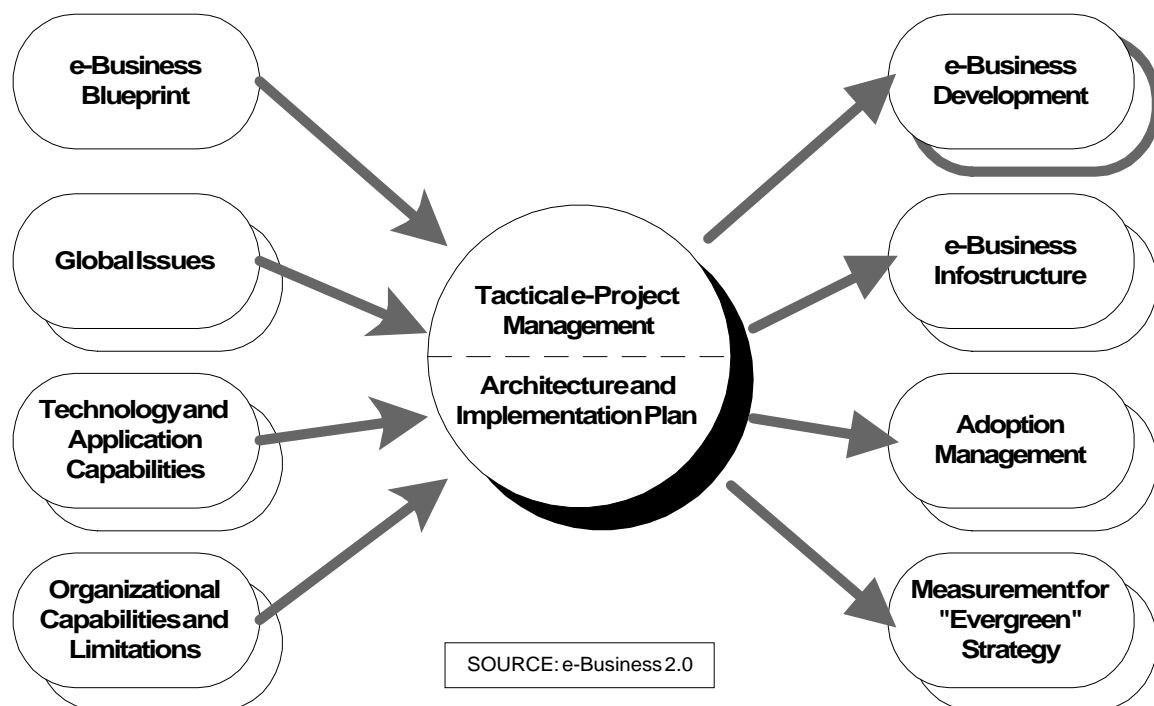


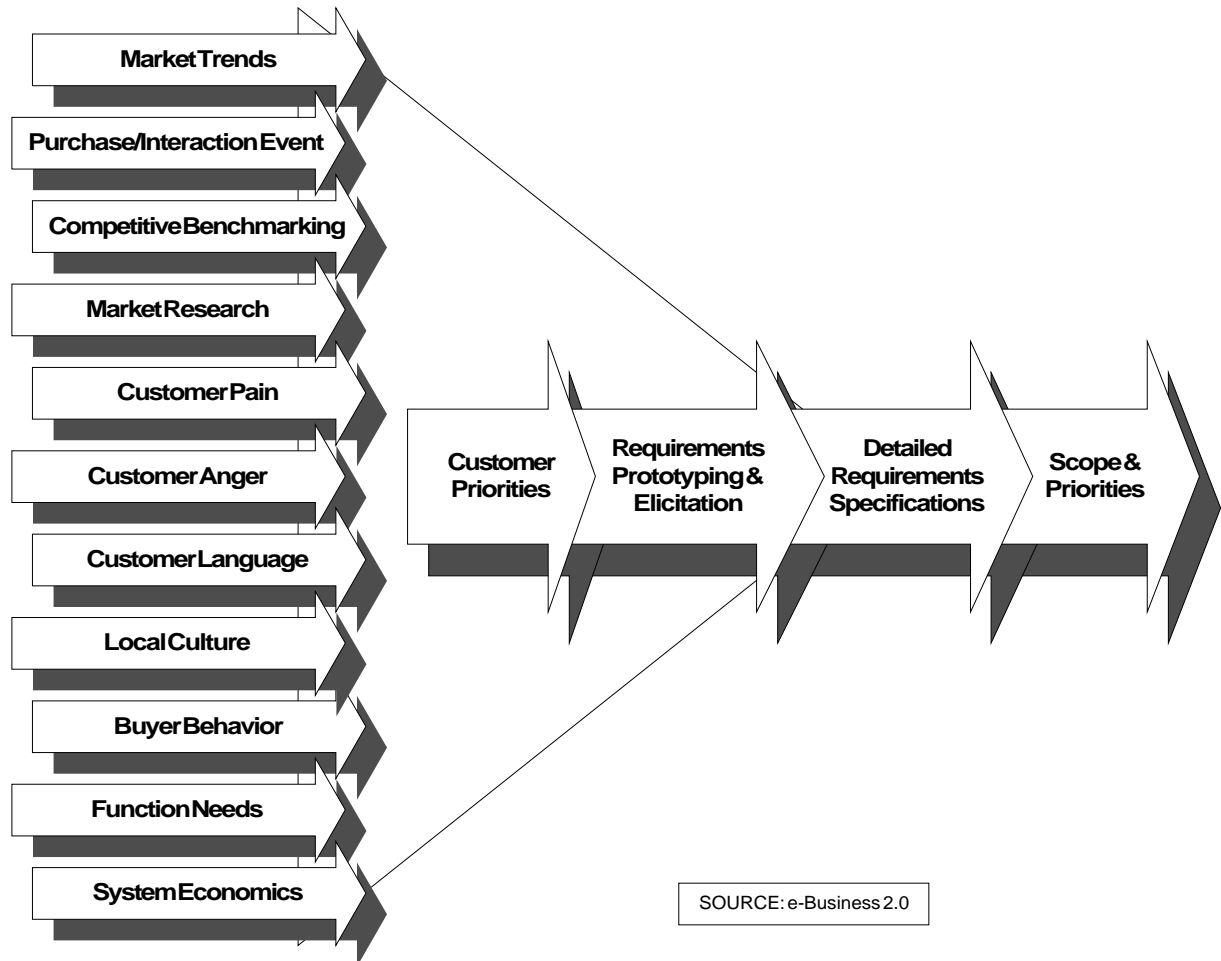
Figure 1 illustrates how the elements of tactical execution fit together in the overall strategy to alleviate customer pain. What is that pain? It is the reason for being here in the first place!

Customer-Centric Design

A global Web initiative must be based upon opportunities identified to address customer problems. Every possible source of potential opportunities must be exploited in order to provide the ultimate online customer experience. As the e-

business process matures, the company must be willing to tackle significant pain – the headaches – customers face. The key question managers must ask is: *Where do my projects fall in this customer-pain continuum?*

Figure 2. Gathering Customer Requirements



The interesting thing about such projects is that the most important opportunities tend to be the most simple, everyday transactions that we would like to make even easier. The customer requirements gathering process is the most critical undertaking the business can perform, and the resulting information can be categorized in four flavors.²⁴

1. Strategic, “forward-thinking” requirements that the market has not asked for yet.
2. Customer-driven, “requested” requirements.
3. Technology-driven requirements.
4. “Feature-complete” requirements for adding more bells and whistles to existing requirements or providing fixes.

²⁴ e-Business 2.0, p. 474.

The requirements-gathering process is illustrated in *Figure 2*. Note all the input parameters, especially those directly related to customer needs or customer pain. It is crucial that these elements be explored and addressed in the Website design, and the performance metrics used to measure success should also be highly customer-centric. Some of the key performance measurement categories are:²⁵

- *Risk* – How many customers are live and using our online channel?
- *Financial* – What is our revenue growth due to e-business?
- *Loyalty* – Who are the most profitable and most frequent customers to our site? Do we know our most valuable customer segments and understand their specific needs, habits, and buying patterns?
- *Fulfillment* – How do we ensure the efficient processing of orders and shipment of products to our customers? How many orders are fulfilled accurately, on time, and with the right quantity?
- *Customer satisfaction* – Are our customers returning? Is their transaction volume growing steadily?

Of course, there are many other measurements possible, including online performance, transaction processing speed, and integration metrics. Management must have these measurements in mind from the beginning of the project. There are other issues to consider as well, many of which require decisions at the top, and which have a profound impact on the global e-business project.

e-Business Management Issues

The most successful e-businesses on the Web have created a new legacy of leadership, revolutionary strategy, and transition to excellent execution, all supported with top talent. It is of paramount importance, therefore, that the philosophies and policies necessary to sustain these attributes be present all the way from the chairman of the board to the lowest technician.

Rapid changes in both technology and the market require shorter and shorter product and service life cycles. Thus, companies must excel at implementing forward-looking, immediately deployable strategies. In other words, it is essential that the company be ruthless in its tactical execution. If a project cannot be completed within six months, it is usually not worth the effort.

A strong blueprint leadership is critical. For too long, e-commerce initiatives have suffered from decentralized decision-making, while e-business problems tend to be fluid and multidimensional. Many companies have multiple, department-level initiatives competing for resources, and no overriding blueprint strategy to coordinate them. In the meantime, market forces are affecting the usefulness of the resulting systems.

²⁵ e-Business 2.0, p. 494.

The goal of e-business is to develop a portfolio of technical and process solutions that support a well-articulated vision of the future. The need to communicate a clear vision, therefore, must emanate from the top executives of the company. Like the applications that support its achievement, an e-business vision can be developed iteratively and, thus, be continuously modified and enhanced to ensure market relevance.

Management must also pay close attention to its application architecture. The road to e-business is riddled with corporate failures caused by too little attention to building a foundation for a scalable application infrastructure. The number of companies that have been required to dismantle their systems, just to create new foundations in support of e-business, exceeds the Fortune 1000.²⁶

Successful e-business requires companies to recruit the right talent. New applications and market innovations require new skills. The corporate strategy should seek a special blend of talented performers who work together, performing their jobs correctly. It sounds simple; even noble. The fact is, talented performers dislike ambiguous project or corporate objectives. They want tasks that can be measured and evaluated and that provide a concrete sense of achievement. Given the difficulty in past years of retaining top talent, companies need to be creative in their incentive and compensation packages.

Development methodologies should be updated frequently. Much of the available technology used to design Web applications is immature and subject to constant change. Software design teams must cope with these limitations, which include browser incompatibilities (i.e., Netscape vs. Internet Explorer), versions, platforms, inadequate performance, network constraints, and inadequate development tools.

Managers must be constantly aware of changing cultural influences in the global market, especially if the e-business strategy includes the localization of each customer's online experience. In addition to language, color scheme, currency support, and overall design, the local news can affect customer adoption and repeat visitation rates. Companies must be able to transparently fold global events into their strategies and be able to react appropriately.

Finally, management must carefully scrutinize customer adoption. Being continually customer focused means watching customers as they use your product or service. Winning strategies usually embody a revolutionary way of getting feedback from a target market and target customer. This requires clear metrics and measurement. Companies must have tightly integrated, sound execution followed by rapid adjustment when unexpected events occur.

²⁶ e-Business 2.0, p. 495.

Case Study: Ryanair.com

The *Ryanair* story illustrates how a global e-business initiative, embracing the trends and principles outlined in this paper, revolutionized how a struggling airline does business. With the introduction of its Internet site, Ryanair.com has been one of the big success stories in the “bricks and clicks” airline industry. The company’s Web strategy saved over £20 million its first year and has opened new global markets for the airline.²⁷

Ryanair is a low-fare carrier operating in the European marketplace. Following a reorganization of the company in 1990 by a team led by its chief executive, Michael O’Leary, *Ryanair* adopted the low fare model so successfully pioneered by *Southwest Airlines* in the US and re-engineered it for the European marketplace. The company now flies over 55 routes across 12 different countries and carries more than 9 million passengers per year.

A Simple Model: point-to-point service

The *Ryanair* business model is ideally suited to web distribution. The airline offers a point-to-point service across its route network, and does not interline passengers or baggage with other carriers or, indeed, encourage its own passengers to transfer between two *Ryanair* flights. In fact, passengers who wish to transfer between two *Ryanair* flights must do so at their own risk. If for some reason the first flight is delayed, a second flight is not delayed to wait for a passenger. Instead, the carrier prefers to concentrate on maintaining its strict 25-minute turnaround time and industry-leading record for on-time performance.

The point-to-point aspect of its service therefore lends itself to being sold online, as it is a simple product, with no integration with other flights or modes of transport. It is this aspect of *Ryanair’s* business that differentiates it from the expensive flag carriers whose profitability depends on feeding passengers through their hub airports on to long haul services. In this respect, we can see how a return ticket from London to Venice is easier to sell online than a ticket from, say, provincial France to Boise, Idaho, through Charles de Gaulle in Paris, a second hub airport in the US, and back again, using various carriers.

The complexity of this transaction; the number of various ways in which the journey can be put together; the strategic need for the alliance carriers to feed into each other; and the lack of price transparency resulting from this feed, mean that the flag carriers and alliances have difficulty moving a significant proportion of their business online.

Ryanair Before e-Business

The business process relating to a ticket sale prior to the move to the “Open Skies” system (the back-end technology driving Ryanair.com) was as follows. Seat inventory was hosted in the British Airways Booking System (BABS), a legacy system designed in the 1970s and used by *Ryanair* for the previous ten

²⁷ Sean Coyle, commercial director for Ryanair.com.

years. Telesales agents (who accounted for 35 percent of bookings) made passenger reservations directly into the BABS system using a complex system of commands and codes. This necessitated telesales agents undergoing two weeks of training prior to commencing employment, and it took up to two months for an agent to be fully up to speed on making reservations. The balance of sales were made by travel agents via central reservation systems (CRS).

For this, *Ryanair* suffered a double charge: a fixed fee of up to £3 per one-way trip segment, levied by the CRS system for the pleasure of having a travel agent use the system, and a travel agent commission of 7.5 percent of the fare, which was in line with the commission paid by most European carriers. One problem with this was that, for their promotional fares, (in many cases as low as £1 return plus taxes), *Ryanair* lost money on a booking due to the large CRS fee levied.

Following a booking, the passenger had to be issued a paper ticket, which meant tying up people with printing, packing and mailing tickets. This resulted in a lead-time for ticket distribution, which increased during heavy sale periods. It also meant that procedures had to be in place concerning lost tickets, ticket changes and tickets on departure (generally for bookings close to the travel date). Because *Ryanair* does not employ any ground staff at airports, except at Dublin, ground staff occasionally implemented procedures differently across the airport network, sometimes leading to passenger confusion and a degree of dissatisfaction.

Another complex business process in existence prior to the advent of *Ryanair.com* was the payment and back-end reconciliation system. The payment system mainly revolved around the BSP system used by airlines and travel agents to reconcile payments. This is a complex system that is reconciled on a monthly basis, following which, payments due for the previous month's sales are collected from the travel agents and distributed to the airlines. In some cases this means that the airlines must wait up to 45 days for the cash to hit their account following a sale. The back-office reconciliation of these bookings was horrendous, with up to 80 people involved in the input of ticket information into the financial accounting system.

The second channel of distribution used by *Ryanair* - telesales agents - collected payment almost immediately, via credit card for the most part. A difficulty with this distribution channel, however, was that the credit card authorization was subsequent to the sale, and if any card returned unauthorized, a telesales agent had to call a passenger back to get an alternative form of payment, thus creating additional cost for *Ryanair*.

Time to market in all cases was a problem. *Ryanair* could have a seat sale and would have to notify hundreds of travel agents of the offers; advertise the offers extensively to promote awareness among passengers; notify telesales agents of the special offers; and so on. This meant that offer/sale periods had to be lengthy to avoid the offer becoming redundant before the market found out about it.

And then there was *Ryanair's* attempt to globalize throughout Europe. In addition to the question of cost-effective distribution in new or expanding markets, the *Ryanair* call center in Ireland handled English-speaking callers only.

The company began subcontracting a number of small, local-language telesales operations in some of the countries where they operate, to take bookings from that country. The ability of these operations to expand to take large volumes was questionable, and the cost of setting up *Ryanair* telesales operations locally was prohibitive. The Internet was seen as a perfect tool for large volume scalability in markets where local language expertise was missing.

Ryanair's e-Business Solution

The introduction and development of the *Ryanair.com* website as a global distribution tool for the airline had the effect of solving many of these problems:

- Training for telesales agents on the new system dropped to two days, as opposed to two weeks, and the Windows-based telesales agents system reduced mistakes during their first weeks.
- *Ryanair* no longer loses money on cheaply priced tickets. The marginal cost of a ticket is extremely low because the Internet is a free distribution tool.
- Paper tickets are no longer required - passengers simply print an itinerary or jot down a locator reference number that contains the details of their booking, and show up at the airport with a photo ID to prove who they are. Eliminated are ticket changes, lost ticket procedures, and passengers picking up tickets at the airport; and the policy for dealing with passengers is consistent across all airports. The selling and distribution channels have effectively been merged.
- Much of the back office reconciliation is eliminated through the use of advanced reporting systems, which are a feature of the booking software that "Open Skies" provides.
- The cash collection system is greatly simplified with the reduction in bookings via the travel agent. In addition, the delay in receiving payment for flights from travel agents applies to a smaller number of flights.
- The credit card approval process and selling process have been integrated which means that the value of the sale can be recognized immediately and the chances of payments not coming through for a booking or a booking being changed, are reduced. The telesales agent can concentrate on selling rather than chasing payment.
- The Internet is the perfectly scalable distribution tool to break down international barriers. The need to train/subcontract/employ local language speakers on the ground is eliminated. There is no lead-time in terms of rolling out a new route or base.
- The time to market is instant in terms of selling seats quickly during a big promotion. As soon as the fares are available in the system they can be

flagged on the website. An email notification is sent to registered users to advise them of particularly appealing offers.

Customer Adoption of Ryanair.com

There are a number of reasons why the website has been such a success. First, the simplicity of the product appeals to the user. The site is functional, easy to use, and can be understood by anybody who managed to make it onto the Internet in the first place. The developers deliberately constructed it with the technophobe in mind: it does not use Flash™²⁸ or any other tool that would require the user to download software or have the latest version of a browser. The booking process is quick, and most importantly, gives the user what they want: low fares. The price transparency of the Internet means that users can browse/shop around with a number of different sites and compare the cost of making the same/similar trip elsewhere.

The availability of low fares on the site is undoubtedly the key to its success. This availability manifests itself in different ways. Because *Ryanair* has the lowest cost-base in the industry, it can offer the lowest fares and sell approximately 70 percent of its seats at the two lowest fares on any one route. A unique feature that the site also offers is the “Lowest Fare Guarantee,” a double-the-difference money back guarantee which offers users twice the difference between the fare on a *Ryanair* flight and a lower priced flight from a competitor for the same itinerary.

In order to build loyalty to the site, only registered users are sent special offers by email. A further enticement is the offering of lower fares on the Internet than via the traditional (phone or agent-based) systems. For example, tickets purchased at Ryanair.com are deliberately priced £5 below the call center. Finally, the CRS systems don't even get access to the lowest classes of fares, which, not only restricts the travel agents but also restricts Web intermediaries like *Expedia* and *Travelocity*.

Success Measurements

As a result of these Ryanair.com features and developments, Web sales went from almost nothing to over 65 percent of total sales within the first year. In total, 93 percent of bookings are now taken directly by the company, rather than through travel agents.

Considering that the average cost of distributing via each channel is 14 percent travel agent, 4 percent call center, and less than 0.5 percent for the Internet, it is easy to see how the company saved £20 million in its first year. By giving back some of those savings in reduced ticket prices and increased availability of lower fares, the success of the site is destined to continue.

Ryanair.com has one of the most successful e-commerce operations to emerge from Ireland. The site's traffic amounts to over 500,000 page impressions per

²⁸ Macromedia Flash™ is a multimedia player used to display ads and animations on websites.

day, with 30 to 40 percent of *Ryanair's* bookings being made online. With an average of three seats per booking, over 60,000 low-fare seats are sold online every week.

Not only does the Web presence mean that prices can be increasingly elastic, if there is a discount on Ryanair.com prices online it gets a faster reaction and therefore more sales. The company has also found that once its customers are comfortable online they stay there, and they very rarely go back to other ways of booking. Some will go to the call center to confirm, just because they are unsure about booking online, but as consumer confidence grows, less and less call center traffic is anticipated.

Conclusion

Building a successful global e-business system means balancing dozens of management factors, competitive opportunities, technologies, applications, localization issues, and company policies. The design process must also include substantial risk assessment, because hitting the Web in the best of circumstances is a gamble. IT managers must learn from the mistakes of others, and walk the fine line between technological innovation and marketing failure. As we have seen, however, the key to staying balanced on that fine line is keeping the customer's total online experience in focus and assigning the highest priority to systems that serve customer satisfaction.

Today's cyberspace market thrives on speed, both in transactional performance and in quick competitive responses. The implementation of business rule meta-modeling, and being sensitive to local market cultures, are two important methods of maintaining "e-speed" and of ensuring "e-survival."

While this document has concentrated on the project-level and corporate management issues related to the design and development of e-business websites, there are many additional pieces to the puzzle, including server configurations, tools, operations and system management software. These issues are suited for a separate, more technical study. However, without the clear and complete buy-in, at the executive level, of proper customer-centric design philosophies, no amount of technical expertise will attract and retain online customers.

Successful e-business initiatives, therefore, must start at the top in order to stay at the top once released to the Internet.

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