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MANAGING CHANGE

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DEVELOPING AGILITY CAN MAKE CHANGE WORK FOR ENTERPRISES INSTEAD OF AGAINST IT. AND THE ABILITY TO MANAGE CHANGE CAN PRODUCE AN AGILE, SUCCESSFUL COMPANY.

To paraphrase Mark Twain, rumors of the mutual demise of shrink-wrapped software and the independent software vendor (ISV) model are greatly exaggerated. We've all heard that a software revolution is coming, and the delivery of software as a service over the Web is making ISV packages and every customized solution we now use obsolete. Well, that revolution is underway, but don't bet on it having its full effect for at least 15 years. There will be changes in how we use software, but they will be evolutionary, not revolutionary.

Change is a constant in business, especially the business of IT. The pace of change is accelerating. IT can get caught between the need to maintain existing systems and the requirement to innovate in response to change. The most effective strategy for managing business changes is to build a flexible IT infrastructure, synchronized with business processes, agile enough to respond quickly to change.

The increased pace of change has led to a number of rather wild predictions about fundamental shifts in the enterprise software industry as IT struggles to support changes in business processes. One currently popular prediction is that the era of Web-based services has arrived, that shrink-wrapped software is dead. But, like the predictions of the death of the mainframe or the rise of the paperless office, this is not quite the case.

Before we rush to make predictions about the future of enterprise software, it is important to understand the history of the software industry. I argue that it has three clear stages, and all three stages will be relevant for the foreseeable future.

The History of Software

In the early days of IT, nearly every application was highly complex and fully customized. Custom code was written from the ground up to meet the needs of a specific company's business process. This first stage was the era of IBM mainframe programming, of COBOL and FORTRAN and JCL. Y2K was its Achilles' heel.

The second stage began with the emergence of customized ISV packages and commercial off-the-shelf (COTS) packages. These are still used for many applications, as are completely customized solutions, as the emergence of the ISV solution did not replace all the custom-coded solutions. This represents reality for most IT departments today. Customized ISV software, such as SAP, is used for business processes unique to each enterprise. These customization changes are coded into products that have been somewhat commoditized for mass distribution.

ISV packages allow the company-specific requirements for some processes to be reduced. If company-specific requirements can be eliminated, then, as with e-mail, the software can be outsourced to external providers who offer a standardized, cost-effective solution. These herald the third stage of software solutions, standardized outsourced solutions, which I'll discuss more about in a moment. However, most companies still require, and pay for, customized changes to standard packages. Examples include customer relationship management (CRM) and human resources management software. Each company also continues to develop its own complex, highly specialized solutions for company-specific business processes. Examples of these "secret sauce" special packages include Hewlett-Packard's own systems for manufacturing inkjet printers or Intel's software used to design its silicon chips. There will never be a volume market for these packages. No ISV would find it profitable to write them. Applications written for these processes require costly stage-one-type coding from the ground up.

In the third stage, companies outsource a wide range of standardized services delivered over the Web. E-mail is a classic example. A company no more needs to run its own e-mail system or write a custom application to do so than it needs to run its own package delivery or mail

delivery systems. At HP we use Microsoft Outlook, UPS, FedEx and the Postal Service. All provide a perfectly acceptable standardized solution.

Advocates of this kind of standard solutions' future growth point to companies like Yahoo, eBay, salesforce.com and HR.com. These Web service providers offer entirely standardized solutions for increasingly standardized business processes. Using these solutions does not in itself contribute to a company's competitive advantage. In addition, your business process must be modified to match the requirements of the application software, not the other way round. Companies are required to coordinate their providers and their services, schedule the providers' activities and adapt their own business process needs to meet the providers' processes, since those standardized, one-size-fits-all processes must work for many other users.

Under the Web services model, enterprises no longer need to purchase a software license. Instead, they "rent" services and are billed on per-unit usage, eliminating the over-provisioning associated with either the ownership or the licensing structures of stages one and two. The Web services delivery model is already in use and is more cost-effective than the ISV model. This is reflected in the decline in ISV sales and the consolidation of ISV vendors. This decline has led to some wild predictions that all forms of stage one and two software will soon cease to exist.

However, I meet customers every week who tell me this is not the case. There might be start-ups with a simple business model where all software will be Web-based. I understand some people make a great living selling on eBay, and they probably use Office and Quicken to manage the rest of their business needs. But large companies, especially those who have been around awhile, have a software landscape that often resembles an archeological site. Layers of solutions exist on top of one another. They can't just "rip and replace" and hope to stay in business. The technology trade press is full of reports of companies who try and fail.

There are two main reasons why customized software solutions will not disap-

pear overnight. First, chief information officers (CIOs) and IT departments of established companies must continue to deal with 20 years or more of legacy systems from the first two stages of software evolution. This fact alone indicates that a complete transition from stage two to stage three is not likely for at least 15 years in those enterprises. But it is also true that all companies, regardless of size and age, will continue to have stage one and two business process needs requiring customization. These are less-understood business processes that do not allow third-party suppliers to create off-the-shelf solutions. For example, although e-mail and HR can be outsourced, you usually cannot outsource compliance. The less understood and more innovative a business process is, the more difficult it is commoditize. As simpler, better understood processes become standardized and outsourced at one end of the spectrum, innovative processes that form the core of the company's competitive advantage will be added on the other end.

A savvy CIO will track the percent of IT budget spent on maintenance of existing systems vs. innovation in new solutions. By aiming to increase the percentage spent on innovation, you will contribute the most to the bottom line. Those innovative processes are often highly customized solutions. Because of this dynamic, it is unlikely we will ever achieve a 100 percent Web services model. The software your organization uses today and will use well into the next decade will be a mix of these three stages of evolution. This means you need to

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allocate a portion of your budget to maintenance as well as to free up a fair-sized chunk of budget to drive innovation.

The Event-Driven Enterprise

Because of this, the demand for simplicity, manageability and adaptability is growing. I've yet to meet a customer who wants things to be more complex, less manageable and more rigid. These demands redefine how companies organize themselves, as well as how they buy and use technology. Simplification makes things more manageable and affords businesses greater flexibility to adapt to change.

Change in business processes continues to drive the need for adaptive IT solutions. Technology itself also drives change. Many processes are becoming digital, mobile, virtual and personal. This drives change in IT and will offer a competitive edge to businesses, which can benefit in new ways of interacting with customers, suppliers and partners.

Because every business decision triggers an IT event, IT can either be a business' biggest enabler or its most serious impediment. For IT to be an enabler, it must become adaptive and able to flex with shifting business conditions: a platform for the efficient and effective operation of the business, including the delivery of data, business applications and processes.

Business processes and IT must not only be integrated, they must move together so they are synchronized to capitalize on change. A company that does this successfully will be an "adaptive enterprise" – able to adjust in real time to changes that affect their business and provide competitive advantages. Software is key to this synchronization.

Enabling Adaptation

In an adaptive enterprise, the key drivers are not those maximizing IT performance but those maximizing business performance. IT is delivered as a service, instead of being functionally oriented and focused on assets, such as the number of servers or the amount of storage space used. Back in the days when all software was stage-one custom code, services were often monolithic. Making any changes

disrupted the whole process. A more modular approach has benefits. Service delivery is functionally separate from delivery management. The service-oriented IT environment is tightly and dynamically tied to the company's business requirements; managed as a single, distributed resource; and powered by modular, standards-based components, drawing on virtualized systems that can be allocated and reallocated as needed. IT departments can then begin to measure success based on business outcomes instead of technology outcomes.

IT managers must implement a set of design rules in four main areas: simplification, standardization, integration and modularization.

Simplification allows a company to reduce the number of applications it uses for a single function.

Standardization is not so much the adoption of industry standards or a single supplier as an antidote to customization, such as standardizing on a single instance of a key enterprise application.

Integration must encompass everything from the business process down into the raw hardware and, finally, link those systems with customers and suppliers.

Modularization requires rules that allow the development of a service-oriented architecture and that enable virtualization and model-based automation.

The critical links between business processes and IT are automated through a combination of management software and services. Think of management software as the glue that links your business processes to your IT processes and enables an agile response to change.

I also believe technology alone will not suffice. There are important people and process issues as well as those of IT governance, of "domains of responsibility," that can clarify when to implement a stage one, two or three solution. People and process issues are the hard ones. In comparison, IT alone is easy. By taking all three of these into account, it is possible to run IT as a business, delivering innovative solutions that add to the bottom line.

The adaptive enterprise model will become even more important as technology such as RFID chips and sensors are used throughout the supply chain for tracking and monitoring products. RFID technology will take the synchronization of business processes with IT to the next level, since it provides the potential for multiple levels of real-time information throughout the supply chain, in areas way beyond the data center walls. It supports the adaptive enterprise concept by speeding up supply chains while also making them more visible.

The HP Example

Here at Hewlett-Packard, we've spent more than two years studying how to manage and measure agility. The concept of the adaptive enterprise was born in our own experience and the expertise we gained as we undertook the massive task of integrating the IT infrastructures of HP and Compaq in preparation for the 2002 merger. We discovered that to achieve this integration we had to use industry-standard architectures, modular components and consistent implementations. And in doing so, we reduced our IT costs by 25 percent, from 4.6 percent of revenue to 3.5 percent today.

When we started to bring these two companies together, we had more than 7,000 applications and 160,000 employees in 167 countries, with a total of 260,000 e-mail addresses. And we accomplished this under tight deadlines. On the first day of the merger, we were able to offer an integrated Web site for our customers, integrated supply chains and integrated e-mail, so all of our employees could collaborate, find one another and talk with one another.

Managing costs, improving quality and mitigating risk were once the three critical performance metrics for any business. All three are still important, but now a fourth metric has joined them in importance: agility. The complex landscape of custom code existing alongside customized ISV packages, COTS packages and standard outsourced solutions require IT be agile. Agility clearly has an impact on cost and on quality. And it clearly has an impact on risk – the risk associated with any change made inside the company. Developing agility can make change work for the enterprise instead of against it. And the ability to manage change can produce a new type of company for this new century – an enterprise that embraces change and uses it as an ally.

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In addition to her work as senior vice president and general manager of adaptive enterprise, Nora Denzel also leads the software and consulting and integration businesses for HP. Denzel has responsibility for the engineering, product marketing and technical support of HP's industry-leading software and support services, including OpenView, OpenCall and ProLiant Essentials. She has been named as one of the top 20 Storage Movers and Shakers by *Storage Inc.* magazine and one of the most powerful people in networking by *Network World* magazine. She also was honored by the YWCA with a Tribute to Women in Industry Award for her contributions to IBM's storage products and was named as one of the top 50 technical women of the next millennium by *Feminine Fortunes Magazine.*

About Hewlett-Packard Software Global Business

HP is focused on helping people apply technology in meaningful ways to their businesses, personal lives and communities. Its annual R&D investment of nearly $4 billion fuels the invention of products, solutions and new technologies. The company produces an average of 11 patents a day worldwide. HP is the largest consumer IT company, the world's largest small- and medium-sized business IT company and a leading enterprise IT company. HP technology now ranges from consumer handheld devices all the way to some of the world's largest and most powerful supercomputer installations. The merger with Compaq Computer Corp. forged a dynamic, powerful team of 150,000 employees doing business in more than 170 countries.