IBM

e-business case studies

National Semiconductor:

Using Lotus Domino and Notes
to give sales reps more time to sell

e-business

Putting e-business to Work

CONTENTS

LIST OF FIGURES

The Company

• Based in Santa Clara, California

• Develops and manufactures semiconductors for computers, networks, and the telecom-munications industry

• Sales of $2.5 billion in 1997

Offices

• Arlington, Texas

• South Portland, Maine

• Greenock, Scotland

• Santa Clara, California

• Melaka, Malaysia

• Singapore

The Web Site
www.national.com

• Supports 13,000 Lotus Notes users

• Regional application servers to assure reliability

Business Benefits

• Currently tracking $14 billion in revenue opportunities

• Increased loyalty among distributors

• Lowered customer service costs

• Able to transfer 50% of its marketing resources to other departments

IBM Products and Services

• Lotus Domino

• Lotus Notes

OVERVIEW

e-business case studies: National Semiconductor

Based in Santa Clara, California, National Semiconductor (*www.national.com*) develops and manufactures semiconductor products for such markets as fax machines, cellular phones, desktop and notebook computers and peripherals, local and wide area networking devices and telecommunication equipment. National, which reported sales of $2.5 billion in 1997, employs approximately 13,000 workers worldwide. The company maintains wafer fabrication facilities in Arlington, Texas; South Portland, Maine; Greenock, Scotland; and Santa Clara, California. Its test and assembly sites are in Melaka, Malaysia, and Singapore.

This case study examines National's use of Lotus Domino and Notes to support its direct and indirect sales infrastructure.

BUSINESS DRIVERS

National's Domino and Notes initiative, dating back to 1994, has focused primarily on supporting sales and marketing functions within the company. As evidence of this focus, most of National's technology improvements have been driven by a unit of its international marketing and sales organization, which Phil Gibson, Director of Interactive Marketing, calls "an application development group that grew up out of the regional channel marketing function." While it is difficult to generalize National's goals, Gibson sees a common thread running through all of its application development aims. "The one thing all our users have in common is that they can't get enough time. It's the one thing that's precious — you can't replace it. Time to design. Time to market. Time to gather information. That's the one thing we're aimed at: how do we save them time."

Indeed, from 1994 — when it first rolled out its Notes-based Marketing Encyclopedia — to today, National's application development efforts have focused closely on the unique productivity needs of distinct constituencies. "Everything is focused on who the target customer is for the application," says Gibson. "Whether it's our [Domino-based] Team Extranet, where the target customer is the outside distribution sales person, or it's the [Notes-based] sales force automation system, where the target is the actual OEM sales person who visits the customer, the question is 'how do we make that person more productive?'" In addition to supporting direct and indirect sales and marketing personnel, National also targets its customer's design engineers through a public Web site. Here again, the goal is to maximize design engineers' productivity, thus adding to the overall positive experience of dealing with National.

ADOPTION STRATEGY

National segments its Domino and Notes platforms into three major categories. The implementation that has been in place the longest is the direct sales force automation platform, a Notes application that National sees as primarily "intranet oriented." The second area is National's channel management sales force automation activity, an award-winning Domino application known as "Team Extranet" that is targeted to National's distribution sales force. The third major Notes/Domino implementation is National's public Web site, where it uses Notes to automatically route and process feedback e-mail that comes in through the Web site, as well as process other types of forms which are handled through Notes templates. Prior to using Notes, National generated forms through handwritten CGI scripts.

Gibson sees Lotus Domino and Notes as the ideal solution for National's sales and marketing initiatives, given the collaborative and workflow aspects of such processes as lead tracking and management. "The theme across all these applications is that whenever the application involves workflow, there is no more productive, more useful way to integrate it into the organization and to do things with it [than by using Lotus Notes]. There is no faster development environment. There's no more easily accessible environment for our company," states Gibson.
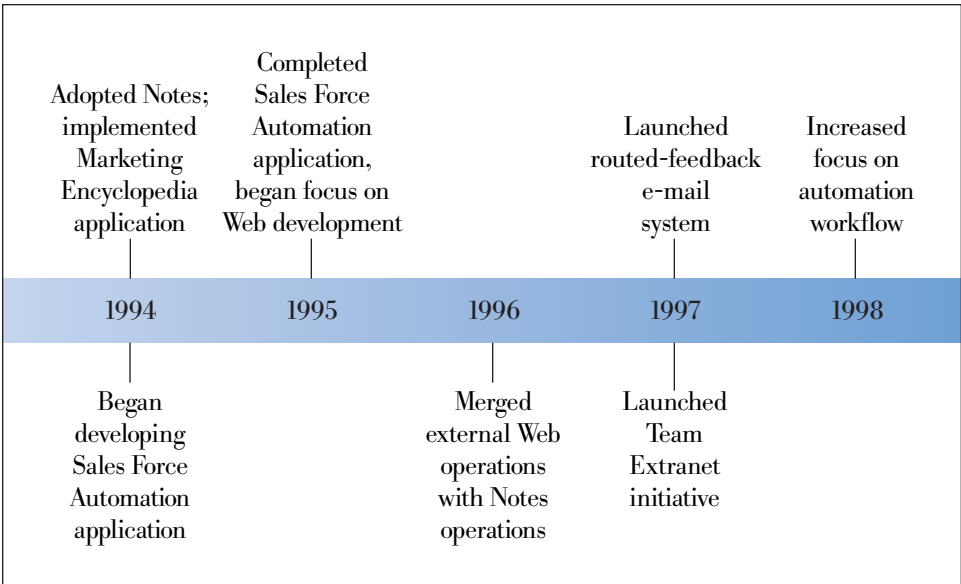
Adoption Timetable

National Semiconductor selected Lotus Notes as its groupware platform in 1994 – over such competitive platforms as Novell's GroupWise – on the strength of its market leadership. National's first Notes application was the Marketing Encyclopedia, launched in 1994, followed by its internal sales force automation application, which began in 1994 and reached full production in 1995. By the beginning of 1995, National had begun to ramp up its external Web site activities, which were ultimately integrated with their Notes operations in 1996. In late 1996 and early 1997, National introduced its first Web-enabled Notes application with a routed-feedback e-mail system. National's Domino infrastructure, including its Team Extranet platform, was launched in 1997 (and has since become an international tool). Likewise in the last quarter of 1997, National completed the transition from handwritten PERL scripts for its forms-driven activities to Notes templates. Figure 1 illustrates National's implementation timetable.

Since that time, National has been focusing extensively on automation workflow, which – along with templates – it considers key strengths of Notes. Gibson sees the ideal environment for leveraging Notes one "where there is an internal audience that needs to deal with information, then process it and move it from step A to B to C – that sort of workflow in a Domino and Notes environment is very powerful."

> *"The theme across all these applications is that whenever the application involves workflow, there is no more productive, more useful way to integrate it into the organization and to do things with it [than by using Lotus Notes]."*
>
> *— Phil Gibson*

Source: National Semiconductor, 1998

Figure 1. Notes/Domino Implementation Timetable for National Semiconductor

Architecture

National's Notes infrastructure is arrayed in a hub/spoke architecture (Figure 2), with a centralized mail server located in Santa Clara handling approximately 13,000 Notes users, and a number of regional servers located worldwide. National has also deployed a number of application servers within each region to ensure that applications run with high performance on a localized basis.

National's Domino infrastructure, run by Gibson's group, is based around separate hosted servers that support U.S. and international markets. The domestic Domino server resides at Exodus Communications (an ISP in Santa Clara), while the international Domino server resides at Digital Island (Honolulu, Hawaii). National also maintains development servers at its Santa Clara headquarters, where it develops new applications before rolling them onto the hosted servers.
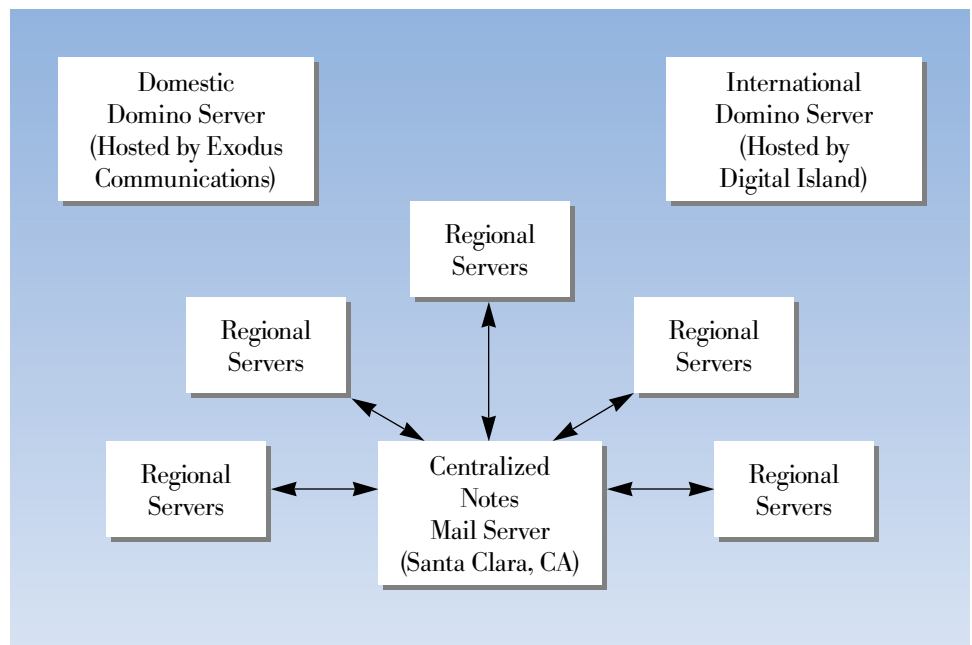
Source: National Semiconductor, 1998

Figure 2. Basic Notes/Domino System Architecture: National Semiconductor

Advanced Applications and Legacy Integration

In addition to the sales support functions outlined in Figure 2, National has been aggressive in creating advanced Notes-based applications to support its product line marketing organization, located in Santa Clara. An important element of this application development has been a tight integration with National's mainframe data, which includes its "book-bill-backlog" data. For example, National has used Notes, in conjunction with Notrix from Percussion Software, to create a sophisticated data mining application that presents National's product line managers with a graphical life-cycle analysis for all its products.

Under National's data mining application, data is harvested each night and placed in a Notes repository, after which a series of "agents," or rules-based programs, are run to transform the data into useful graphical format. About the benefits of using Notes for data mining applications, Gibson says, "It gives a product line marketing person a snapshot of what's going on in the world as of yesterday. We use Notes for data mining because it's something we're familiar with, it's easy to manipulate the data and it's certainly easy to manipulate the display of the data."

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> — *Phil Gibson*

RETURN ON INVESTMENT

Gibson notes that in the context of National's Domino and Notes initiatives, its approach to return on investment is nontraditional. "Everything we do is based on one overriding goal: how do we expand the channel and our reach? How do [these initiatives] target growing the top line?" National's sales automation initiatives achieve these goals in myriad ways. For example, its Team Extranet program, targeted at its 8,000 distribution sales representatives, attacks the issue of top-line growth on a number of fronts, all of which are geared toward getting the reps to consistently use the platform. How did National achieve this? "With Team Extranet, the goal was to make it very easy, very easily accessible and very fast for [the reps] to be able to register and track a customer's project. And, in turn, for doing that, to guarantee themselves an increased commission in response," says Gibson.

Constructing a platform for supporting third-party sales representatives — who sell products from many companies — made the issue of system usability and utility even more important. According to Gibson, "A sales force will be more inclined [to sell National products] if it finds it easier to get paid selling National."

Gibson sees the enhanced functionality of the Team Extranet platform as the linchpin in National's strategy to engender loyalty across its distribution sales force, thus increasing the volume of generated business. "The advantage is that it makes a salesperson as productive as possible, and in doing that, it builds up that channel so that it's more powerful than it is today."

Other benefits are less direct, such as the fact that increased use of National's Team Extranet platform will tend to detract from using competing platforms, further strengthening National's competitive positioning. Gibson calls this a "triple advantage."

Overall ROI Benefits	
Function	**Benefit**
Sales and Marketing	Increased reach Improved ability to track opportunities Improved product line management capabilities Increased loyalty among distributors
Customer Service	Lower costs
National Customers	Increased productivity for customers' design engineers

Source: National Semiconductor, 1998

Figure 3. Benefits of National Semiconductor's e-business Solution

While National hesitates to point to any single metric as a barometer of the program's success, two key performance measures have emerged as extremely important:

•Growth in revenue tracked per sales person

•The number of projects (*i.e.*, opportunities) that a sales person is able to track

According to its own estimates, National's distribution sales force is tracking approximately $14 billion worth of revenue opportunities in various stages of the selling cycle, of which it reasonably expects to garner some $4 billion. National notes that the previous process of tracking business in the pipeline was highly fragmented and manual, and was largely driven by the local distribution sales manager's skill. While the exact magnitude of increase in reps' tracking capacity in unknown, Gibson notes that the value provided by the platform has made the issue of payback a "no-brainer" (Figure 3).

National's investment in Notes- and Domino-based platforms has also enabled it to optimize the allocation of its sales and marketing personnel in a way that increases the overall potency of its channel operations. Since 1994, National has reduced its regional marketing organizations headcount (which supports its regional sales forces) by more than 50 percent, with most of these resources being redeployed in more strategic roles, such as product line management. "That hollowing of the middleman function has been totally enabled by the fact that we've had Lotus Notes and sales force automation and all these Domino-based Web infrastructures in place," says Gibson.

"It's more of a 'lights out' kind of process. You don't have to have anyone babysitting the process anymore."

— *Phil Gibson*

FUTURE PLANS

National Semiconductor plans to expand its Domino and Notes activity to achieve a number of goals, including an increased focus on supporting its customers' design engineers on a global basis. From a functional standpoint, National expects to continue leveraging Notes workflow and agent capabilities to further enhance its sales and marketing support programs. Gibson believes that agent technology will strengthen the overall productivity benefits of the sales automation programs in two ways. First, it reduces National's dependence on personnel to perform routine processes. "It's more of a 'lights out' kind of process," says Gibson. "You don't have to have anyone babysitting the process anymore."

Agent technology's second key benefit is the ability to embed customer information into automated processes, thus reducing National's exposure to disruptions caused by employee turnover. "When you're talking about [using agent technology] for marketing and sales, there's an inherent memory about what's important about the customer. [Using agent technology] takes care of turnover, because now you have an inherent memory of what's going on with the customer, instead of what the sales person left in their desk. The corporation doesn't stumble as much when people change jobs."

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