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How Jack Welch Set Up GE for “e”...
and how GE’s oldest business... Lighting, is applying it.

By Neil Gillespie

GE chairman Jack Welch is a very accomplished golfer. Though ranked #2 among CEO golfers behind Sun Microsystems’ Scott McNealy, Jack beat him in a match requested by his younger challenger (*Fortune*, May 8, 2000). Scott later confessed that his motivation for arranging the match was to start a relationship and benefit from Welch’s wisdom, but he didn’t lose on purpose. So, they share competitiveness, but other than that, they came from different worlds. Jack led the world’s most successful Bricks and Mortar Corporation, and Scott led the company whose products powered the Internet. Nevertheless, they became instant pals. Scott, 45, is now the freshman on the 64-year-old Welch’s board (installed January ‘99). That was a big sign that Welch was planning a new stroke in the GE repertoire: eBusiness.

From No Computer To eJack

Four years ago, Welch stood next to Intel’s Andy Grove on a stage in San Francisco, and told the audience “I don’t have a computer on my desk, and I don’t need one.” Today, Jack uses email, surfs over to Yahoo, GE’s own CNBC site and visits chat sites about GE to check out the gossip. Jack even launched a company reverse-mentoring program, employing 1,000 young Web zealots to tune senior GE execs in to the Net.

These are nice strokes, but here are the strokes that really scored: Since early 1999, Welch gave his business leaders charges to “destroy your own business.com” or “cannibalize your business”, perhaps borrowing a page from the strategy of marketing gurus Trout & Ries (*Marketing Warfare*, 1986), which says the leader in a market should “attack itself before the competition does” to stay ahead.

Attack Your Own Game

Merrill-Lynch, Toys R Us and Barnes and Noble all found out the hard way how dot.coms could attack bricks and mortar (BAM) companies,

Selected GE eAccomplishments since Jan. 1999

GE Lighting: Customer Web Center, Supplier Web Centers, eCatalog, Lighting Solution Center with “Wizards” that help users select products.

Plastics: Online monitoring of customer storage silos senses order point, automates ordering through the Internet. ColorXpress site matches colors for customers, reduces color chip turnaround from weeks to 48 hours. \$5 million sales per week in plastics distribution business PolymerLand, which was zero in early 99.

Industrial Systems: WEB CITY provides a workplace for engineers spanning the globe to collaborate on new product development.

Power Systems: Turbine Optimizer web application helps customers optimize turbine performance by comparing theirs to others and ability to select upgrade options.

Aircraft Engine: Engineers visually collaborate on repairs with customers in real-time through the Internet.

NBC: MSNBC, a JV with The Microsoft Network, is the top Internet news site.

Appliances: \$2 billion web revenues, supplying web content to 1500 dealer websites.

Global Consumer Finance: Over 1/3 of customers apply for loans on the Internet in Denmark.

Medical Systems: Online education, image management, clinical content and commerce capabilities.

GE Website: Overhauled design and ability to buy any consumer direct financial services on-site. Where to buy information provided on other business products. Links to all GE business sites.

Source: GE Annual Report

suffering online attacks from Schwab, eToys and Amazon respectively.

Before it happened to GE, the highly competitive Welch turned to classic defensive strategy: figure out what competition would do to take your business, and then do it to yourself. It’s a strategy distributors should emulate in their own markets against future dot.com encroachment.

Position for the Next Stroke

Welch has only pushed about 5 major initiatives in his 19-year tenure, but they were highly strategic injections of dynamic capabilities in all GE businesses. Welch's latest, to "digitize" every GE business, is not at all novel. Plenty others are farther along than GE in eBusiness, but not in GE's markets. **What *is* impressive about this move is how Welch's prior initiatives set GE up for this latest "stroke"... a relatively easy entry into eBusiness.** Plus, the ***timing*** of this move was impressive, a hallmark of Welch's GE which insures they invest at the right time to get a decent return. GE's record reflects it in these performance improvements from 1995 to 1999:

- Return on Total Invested Capital up from 21.3 % to 25.8%
- Operating Profit as % of Sales up from 14% to 17.8%
- Total Market Value of GE Shares up from \$120 billion to over \$500 billion

The GE Operating System: Shot Maker

GE's success confounds many marketing strategists, who say you need superior focus in as narrow an arena as possible to dominate a market. One reason is that management talent can only be stretched so far before losing effectiveness in any one segment. Another argument says that lower ROI businesses in a corporate portfolio won't get as much funding as the star businesses, hurting competitiveness in their particular field.

Welch's GE defies those arguments with a disciplined "operating system" that allows each of GE's businesses to focus in it's arena while driving home company wide best practice initiatives (see sidebar). The system also develops versatile talent that can move between businesses. These initiatives, or "strokes" as I like to think of them, set GE up for eBusiness as well as any BAM company.

Stroke 1: Break Down The Boundaries

The consummate golfer, Welch seems to know how to launch the right initiative to set up the next, and ***when***, reading the "wind" of the business environment for the right time to hit the shot. Then he surveys things from the vision afforded from his next position. However, on the "golf course" on which Welch found himself in the early 80's, his "ball" didn't have a very good "lie"

The GE Operating System Drives Initiative Execution

Welch's GE doesn't just introduce initiatives and leave business leaders alone to accomplish them. GE has a disciplined operating system that insures skills are transferred, talent developed and operational best practices applied to real business opportunities. This is how it works:

1. Initiatives are passionately launched at the annual meeting of global leaders in January.
2. Businesses then commit resources, high visibility jobs and intense communications programs.
3. Each quarter, the business leaders share what they have done to drive the initiative.
4. GE Educational programs like the Business Management course at their famed Crotonville facility encourage participants to compare best practices in other companies to GE's initiatives with 3 week field investigations and subsequent sharing sessions.
5. Human Resources Reviews in April and May assess capabilities and progress of personnel practicing the initiatives. This identifies the best and brightest.
6. By October, role models have emerged in all businesses and selected to present to the 150 Corporate Officers at their annual meeting, completing the cycle of the GE Operating system.

on the course to his envisioned future. He inherited a big, bureaucratic company with iconoclastic boundaries between business and functions within businesses. So, Welch got to work and launched a mid 80's initiative to create a globalized, "**boundaryless organization**", so walls could come down between businesses and departments, and best practices, technology and talent could be easily exchanged.

Stroke 2: Build Work Process Skills

Next for the best practices, like the early 90's "**Workout**", based on the belief that people closest to the work knew it best. **Workout sessions trained GE people to solve problems with skills like process mapping, in which business processes are flowcharted, picked apart, and streamlined. Workout, however, was missing something.** It was

Six Sigma

Taken from a letter in the Greek alphabet, the term "sigma" is used in statistics as a measure of variation. "Six" Sigma indicates very low parts per million variation. Dr. Mikel J. Harry initially developed and deployed the Six Sigma methodology at Motorola in 1986. For more, see <http://www.6-sigma.com/index.html>

primarily focused on sharpening internal processes without much attention to doing anything different for the customer.

Soon after workout, however, came **Six Sigma**, a rigorous process of statistical and process analysis that

starts with defining customer objectives and processes, and finishes with meticulous statistical controls to ensure the practitioner meets customer requirements.

Stroke 3: Use Skills to Focus On Customer Processes

GE's **Product Service Initiative** drives GE people to analyze how customers use GE products and services and document customer processes so they can provide additional services and apply technologies to upgrade customer's existing equipment. The combined effect of this initiative with Six Sigma made GE ready for the next initiative: eBusiness. How? **First they needed to really get their own business processes down like a football playbook. Then they turned those skills loose on knowing the customer's business processes.** GE now has a massive database of customer processes, highly useful for innovating new services and product solutions. A sterling example of this is GE Plastic's use of the Internet to monitor plastics storage silos at customer sites, sense reorder point and automatically order over the Web. Bravo!

Stroke 4: eBusiness

Now that GE people really knew their own work processes and their customer's too, they were set up for the next step: injecting even more speed, innovation and productivity with an **eBusiness initiative**. Following are examples of how GE Lighting, GE's oldest business, is using eCommerce techniques and the Internet to enhance their productivity, add customer value, build "**stickiness**" and grow their business.

Stickiness

Features of a website that bind customer relationships with highly attractive content, functionality and user customization that combine to make switching costs high.

GE Lighting: Buy, Make, Sell

When a company creates a high level job to push an initiative or new function, they're deadly serious. That's what GE Lighting (www.gelighting.com) did when they established a General Manager of eCommerce. Incumbent Mike Fenger, has a great background in the electrical business, distribution, supply chain issues and information systems as well, making him a good fit for the job he took just a few months ago. I recently interviewed Mike on what Lighting has been doing on the Internet.

Mike explained, **"GE Lighting's eCommerce initiatives are 3-fold: Buy, Make and Sell, covering all steps in the business process."**

- **The "Buy Side"** is really about how to leverage the Internet to streamline relationships with your suppliers.
- **"Make"** applies to internal operations... including distribution.
- The **"Sell Side"** refers to everything you do to help customers learn about, select and finally purchase the product or service"

I offered to Mike that he was saying the Internet was a great tool to improve relationships with suppliers, employees (and what they do), and with customers.

"Right," Mike continued "and to continue with that thought, we look at the Internet in three major types:

- **The Internet**, of course, which is open to anybody.
- **Intranets**, which are open to employees and protected.
- **Extranets**, which are open to suppliers. They are also protected. Extranets can also be built for specific customers."

The Buy Side

Mike explained how GE Lighting is making about 10% of it's commodity buys on auctions, and has constructed "**Supplier Webcenters**" where GE interacts with key suppliers 100% electronically.

GE Lighting has actually been using the Internet for making commodity buys since 1995 on the GE Trading Post Network (TPN), which spun off the super-auction site Freemarkets.com started by GE alum Glenn Meakam in Pittsburgh, PA.

Make: Internal Operations

Mike explained that for productivity reasons, GE tends to think of their relationship with the distributor primarily in the "Make", or internal part of their 3-fold eStrategy, recognizing that many of characteristics of the "sell" side are inherent in the Web functionality presented to distributors.

"Our goal is to provide self service for all functions a distributor needs to conduct with us," said Mike. **"You have to make it fast and easy for the customer to use the web vs. the phone, or they'll go back to using the phone."** "Don't get me wrong, we'll still have our order service

center in Richmond to handle customer calls live. But a good deal of functions are better performed on the web immediately on demand."



Figure 1: GE Lighting's eCatalog features drill down hyperlinks from product categories to specific skus, lets you make and compare features of multiple selections. Excellent!

Mike went on to explain how the web can be engineered to deliver accurate information with flawless delivery... tougher to get out of a human being... unless, of course, they're looking at a web page which delivers the same, accurate information every time, and is universally available to all who need it.

Distributor Connection: Customer Web Center

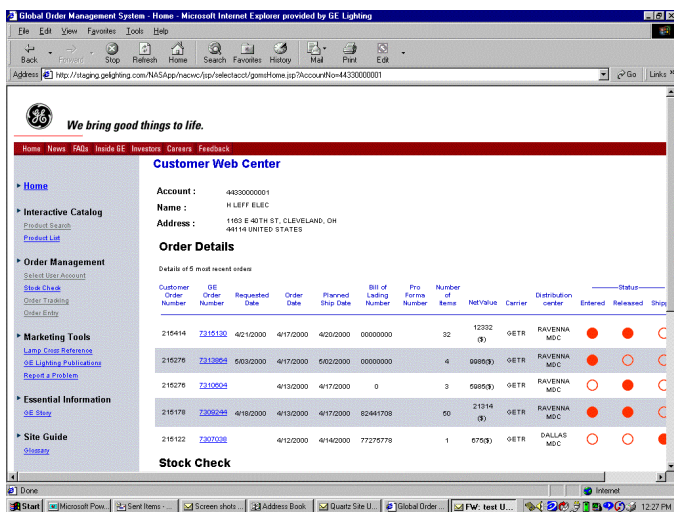


Figure 2: GE Lighting's Customer Web Center affords complete customer relationship management. In this screen, Catalog, Order Management and Marketing Tools functions are displayed in the left sidebar. In this view, the operator chose to review orders, displayed in the main frame. It shows orders as entered, released or shipped to the right.

GE Lighting's **Customer Web Center (CWC)** is a password protected site. A distributor user can log on and find items in the **eCatalog**, check stock, pricing, enter orders and track order status. You can also check status of special pricing requests, long an industry sore point, and you'll see your last few orders listed, too. Click on one and it will reveal order details. "You used to have to call up, know your order number, and wait for the clerk to look it up and get back to you... now you just click," said Fenger.

Mike explained, "Ordering is actually a small piece of the equation right now. Besides, we want to present the user with all facets of his relationship with GE. EDI is actually more seamless right now (with regard to ordering), so we'd rather receive large orders using EDI. But all orders entered into the system whether with EDI or other media, are presented to the customer (distributor) on the CWC."

Mike agreed that before the web was practical for transmitting large orders as EDI works today, industry XML (extensible markup language) standards need to be established and adopted by the major distributor legacy computer systems and manufacturer's systems as well.

Web-Tooling Distributors

From a productivity viewpoint, GE Lighting views the distributor as part of their internal network. "You need the fulfillment function the distributor gives you," Fenger said. "You can't do without it." So, in viewing the distributor as an integral part of their go-to-market capability, they group it in the "make" or productive capability of their eCommerce strategy.

GE Lighting has always stressed distributor training, especially "upselling" to higher performing, higher profit premium lamp types. Now they also want distributors to be well equipped with electronic media to use on their own sites, too. Mike mentioned key tools that accomplish these objectives:

- **Content Kits** of thumbnails, images and extended product information on CDs
- **Training Center**

In this 50-module subweb, a distributor employee can complete competency tests on different product and application topics, get a grade, and receive a recommendation for their next modules. The employee's manager can

then view employee progress and the recommended modules to complete next.

- **Portable "Product Optimizer Wizards"**. The same web applications that GE designs for designing spaces and choosing lighting components are available for distributors to use, in the future, on their own sites.

Employee Productivity

Like most big companies, the human resources and benefits paper shuffle in GE was mind-boggling. Now, employees can go online from their work terminals and accomplish things like:

- Booking travel arrangements
- Reviewing and printing W2's
- Changing Benefit Options
- Changing Savings and Security (401K) investment options and withdrawals
- Updating their Company resume (EMS)
- Preparing Performance Reviews and Career Tracks
- Browsing the Career Opportunity System, evaluating and applying for posted jobs.

The Sell Side

In the consumer channel business, GE has embraced category management as part of their **Growth Center** with a fever. Category management is the methodology for extracting the highest ROI from a category of similar skus. The Web expands this best practice to the sales force. "Now all people can use category management, when previously it was 5 experts," said Fenger. Field sales can now configure the right mix of products for retail shelves to drive highest ROI. GE also provides market sales mix data, comparing it to the retailers POS data, then showing where retailers are missing opportunities. Fenger said there are similar tools for Distributor Markets.

Meet The Wizard at The Lighting Design Center

Visit www.gelighting.com, and the first thing you'll notice is that it is multi-lingual, reflecting Welch's oldest and still operative initiative: Globalization. However, the most impressive features for distributors and I/C users are the "Lighting Wizards", in the **Lighting Solution Center**. These tools help you choose lamp types and lighting equipment based on lighting quality and economic objectives. **Consisting of "Product**

Optimizers" and the "Virtual Design Center", these interactive tools take the user through step-by-step choice criteria and then present the solutions.

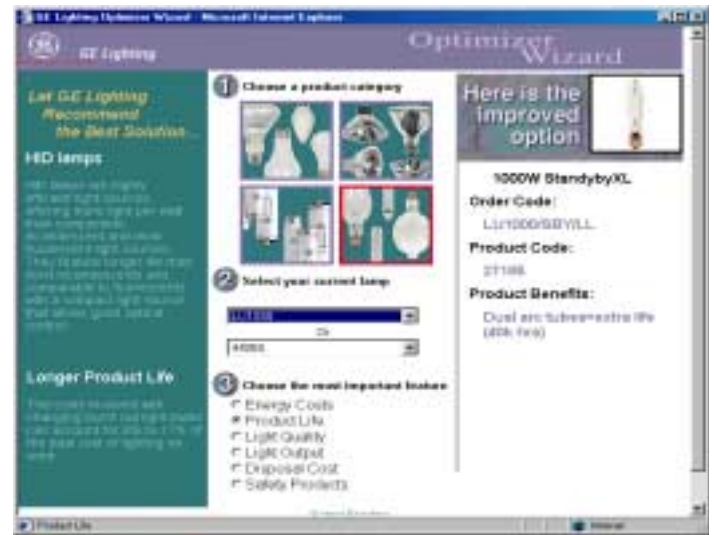


Figure 3: Using the Product Optimizer Wizard, following the step by step instructions will yield a lamp ordering code and benefits description. I specified HID, a 1000-watt HPS lamp, and said I wanted longer life. Now the cost of replacements on high-masts won't bother me as often!



Figure 4: The Virtual Lighting Designer, another "Wizard", lets you visually compare your own selections. I like the one on the left with the cove lighting vs. wall sconces on the right. It even provides a list of lamp sources in the design below, with product links to the eCatalog.

Field Productivity

GE Lighting field sales reps can now access all their sales reports online, and can complete tasks like reviewing special pricing or submitting cooperative advertising allowance claims for distributors. Fenger adds that the Online Training Center has also taken a load off the GE field rep,

too. "In the old days, Distributors had to come to Nela Park (GE Lighting headquarters facility) or wait for the sales guy to come around with the donuts or pizza. Now it's customized for a distributor employee, ready when they are."

A Look to The Future

I asked Mike which potential barriers he thought could impede eCommerce through the distributor channel. He offered the following:

- Distributors need to get Internet access to all desktops. The penetration is far too low right now.
- They need broadband access (DSL, cable, T1, 2, 3)
- The industry needs *all* manufacturers to join the bandwagon "we're only 5% or so of the distributor's business".

DSL

Digital Subscriber Line (vs. analog) operating at minimum 640,000 bps (bits per second) (typical dialup 56,600). Faster speeds up to 7.1 million bps available. Works on a phone line, connects to a DSL modem, then to a network card in computers. Bandwidth isn't "shared" like cable, so the speed is all yours. Always on, and can simultaneously share a phone or fax connection. Networkable, too. Low cost vs. T1, 2, 3

"Speed is a problem", said Mike. "Dial-Up doesn't cut it, especially with the bandwidth eating applications of the future. People won't wait." One of the ways GE is helping is to allow distributors to use co-op program funds to defray the cost of higher speed access like DSL, cable, T1 or T2, for example.

Clean Up The Data, Please

We talked about the issue of bad, incomplete, or hard to decipher product and pricing data supplied to industry service bureaus, and now being handled by the IDW (Industry Data Warehouse). This abbreviated and truncated data does not present well to distributor customers on the web and there are no thumbnail images. The IDW speeds up access to product and pricing data, but some fields are not all populated and product descriptive data is still cryptic. GE, however, went through an exhaustive process to clean up their product data. "It's like cleaning out the garage when it's been neglected," said Mike. "It's a real pain. But after you get it organized and corrected, it's a lot easier for new listings." GE Lighting tackled the problem by using a data management package that assigns entry and maintenance for different data fields in a product record to different organizational functions.

What Can Distributors Learn from GE's Experience?

GE is a very large \$111 billion company and is certainly doing a lot, but what can a distributor do to become a true eBusiness?

1. If You're the Leader, Set an Example.

If you're the business leader and not on the web... you can't lead any more. So start using email every day, get your news on the web and regularly visit competitor, customer and supplier sites, for starters. Jack did it. So can you.

2. Attack Your Business Before Someone Else Does.

Concerned that dot.coms might eat into your sales? Become one. Do it with the objective to put every kind of customer transaction and interaction on the web... or someone else will. Legacy System providers out there take notice: your distributors need lots of help. *Start working with the distributor's customers or you're neglecting a key source of design criteria!*

3. Get Connected and Speed it Up.

First of all, take Mike Fenger's advice. Get all your employees connected and get high bandwidth access. GE isn't the only manufacturer that could help out with this. You might even be able to piggyback manufacturer co-op support and get away quite inexpensively.

4. Write an eBusiness Plan And Have Regular Reviews.

In most respects, smaller companies can implement a GE-like operating system more easily. GE Lighting has a GM of eCommerce. You can name a champion for eCommerce, assign them resources, and ensure that they have networking opportunities in industry associations, marketing groups and key eBusiness conventions to learn best practices. You can write a plan of what you'll research and develop by when, and review your progress against it. Just do it, and keep after it with disciplined reviews.

5. Know Thy Business, Thy Customer's Business, Thy Technology

This is the most important point. Yes, GE is a big company. So how can a distributor learn from them? In the Fortune May 8 article, Welch commented that becoming an eCompany was actually easier than he thought at first. Why would he say that? For three reasons:

1. They learned their own work processes and how to perform them better. (Boundaryless organization, Workout, Six Sigma)
2. They learned customer work processes, objectives and how to serve them better. (Workout, Six Sigma, Product/Service Initiatives)
3. They learned how web technology could help make the first two work together even better, and started putting it on the Web! (eBusiness)

If your work processes aren't documented and consistently performed now, you have no raw material for establishing them on the web. If you don't know how customers really want or need to do things, or don't know how to find out, you won't know how to change your processes and you won't be able to design and implement web applications that really help, either. You'll have to go back to step 1 above and start from "scratch".

GE didn't have to, because Welch, the expert golfer, had already positioned GE for the finishing stroke: "e".

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