



Nathan Research

Analytics in Business

At The Core of Business Operations

**University of North Texas
College of Business**

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GE Annual Report 2009

“Uncertainty is the new Normal”



Dear Fellow Owners,

Time magazine called this era “The Decade From Hell,” and “when you are going through hell,” Winston Churchill advised, “keep going.”

We suffered one of the worst global economic downturns in history. The banking system teetered on the abyss. The financial sector suffered losses that will exceed \$3 trillion. Unemployment surpassed 10% in the United States and rose even higher in many parts of the world. Asset prices across key segments plummeted. People lost faith in the principles of free markets and their power to create wealth and opportunities.

Yet, in 2008-09, a period many considered the most difficult economic crisis since the Great Depression, GE ~~generated~~ ~~earned~~ \$3.6 billion and generated \$3.6 billion of cash. And we finished this period much stronger than we started.

The world has been reset. Today's uncertainty feels like the “new normal.” We will not return to the relative tranquility of the pre-crisis world. Growth will be harder to come by, trends will be more volatile and constituent voices will be louder. We see this environment as an opportunity to “renew GE.”

Last year, we predicted that calamity would reset the global economy. Now we can elaborate on what this reset world means for GE and our shareholders.

PICTURED LEFT TO RIGHT (Seated)

Jeffrey R. Immelt
Chairman of the Board
& Chief Executive Officer

Michael A. Neal
Vice Chairman, GE and Chairman
of GE Capital Services Inc.
& Chief Executive Officer,
GE Capital Services Inc.

Keith S. Sherr
Vice Chairman, GE and
Chief Financial Officer

John E. Rice
Vice Chairman, GE and President
& Chief Executive Officer,
Technology Infrastructure

John Krenicki, Jr.
Vice Chairman, GE and President
& Chief Executive Officer,
Energy Infrastructure

"... with the iPhone. usage forecasting bets are off..."

introducing new innovations. have an increasingly high-quality dependent on the appropriate

Tentacles of Octopus Push to China

By JONATHAN CHENG

HONG KONG—Over the past 12 years, Hong Kong's ubiquitous "Octopus card" has allowed people to ride subways, pay phone bills and buy groceries by waving a plastic card.

Now, Octopus Holdings Ltd. is spreading its tentacles around the world and into its most promising market: mainland China, where the card's functions are being repurposed to handle everything from all-in-one bill payments to birth registration and social security. But as the amount of data stored on the card expands, concerns about privacy grow.

The Octopus card is effectively a stored-value account. Customers deposit cash in the card, and then deduct from it for purchases. Retail outlets like 7-Eleven, McDonald's and Hong Kong supermarket chains accept Octopus payments. Customers aren't required to provide identification to get a card, but instead put down a deposit that is refunded when the card is returned.

Radio-frequency identification, or RFID, the technology at the heart of the Octopus card, already is used to pay fares in a number of public-transport systems around the world, including London.

Octopus, which features an RFID chip made by Sony Corp.,

is pushing the boundaries of how the technology is used.

Octopus cards now double as credit cards and debit cards. Others are used as staff and membership cards. The system has revolutionized life in Hong Kong, handling an average of 11 million daily transactions worth about US\$12.9 million.

Overseas, Octopus has won public-transport contracts with the governments of the Netherlands, Dubai and also Auckland, New Zealand.

But Octopus, a private company owned by a consortium of Hong Kong's public-transport operators, wants to explore deals closer to home. Earlier this year, the company formed a joint venture with Digital China Software Ltd., a Beijing-based spinoff of personal-computer giant Lenovo Group Ltd. Through its venture with Digital China, Octopus hopes to secure contracts within the next three years with 10 mainland-Chinese cities that issue so-called citizen cards.

Several Chinese municipalities are drafting plans for the all-in-one citizen cards, using the same RFID technology as Octopus. Nanjing wants to create a card that would reach into every pocket of daily life, serving as official identification as well as managing such things as pension payments, worker injury compensation and childbirth insurance, as well as payments for



In Hong Kong, Octopus cards can be used for a range

public transportation, culture, education and sanitation. Nanjing says it has been in discussions with Octopus as it rolls out its citizen card.

Hangzhou, a coastal city close to Shanghai and Nanjing, has issued about 2.3 million citizen cards, representing 90% of residents over 16 years old. Hangzhou says it is storing information on its 6.7 million residents—as many as 223 details per person—in a central database that will control what benefits are available.

Many cities envision a citizen card that would allow a patient's medical history and his or her eligibility for benefits to be

called up for residential data, intended to be used for birth registration, and birth registration, and birth registration, and birth registration.

And privacy, Nanjing has said it is aware and has the leakage.

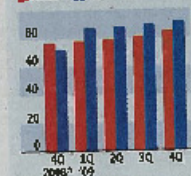
Octopus is laws in the business. In company is how the tech —But Lin article.

Pending iPhone Battle Spurs AT&T

Raising the Bar

With a new version of the iPhone in the works, AT&T faces an uphill battle to close the subscriber gap with Verizon.

Wireless subscribers, in millions:



*Based on the Jan. 2009 4-Quadrant report. Source: the companies.

Continued from page B1

their networks, it said. "The iPhone taught AT&T other lessons its rivals will discover through customer trial-and-error. Before the iPhone, it used to be able to accurately forecast to the minute the type of phone usage each new customer would add to its network based on basic demographics such as age and income levels. The forecast always held true across cities and towns.

But with the iPhone, such bets are off. AT&T executives painfully learned. It now looks at a broader set of customer profiles to forecast behavior. For example, in a metro area with a large proportion of students, the phone operator schedules network upgrades to occur outside

of colleges' nine-month academic terms.

"I'm as interested now in what you're doing when you're not on the network," said John Stanley, head of AT&T's operations arm.

A Verizon-compatible iPhone is slated for mass production as early as September, according to people briefed on the matter. On Tuesday, several analysts said they expect that AT&T's exclusivity will last only until the end of this year.

"It probably won't ship in 2010 because of the extension on exclusivity that AT&T got but they'll be sitting on trucks ready to roll," said Charter Equity's Mr. Snyder.

A Verizon Wireless spokesman declined to comment. Verizon

Wireless is i

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Of course

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Agenda

- Introductions
- Principles Used
- Case Studies
- Our Services
- Parting thoughts

About Us

- Niche solutions organization that assists Retailers and Manufacturers with strategies and solutions in the areas of Supply Chain Planning, Risk Management and Operations
- Areas of focus - Forecasting, Supply Chain Modeling, Product and Merchandise Planning, Price and Promotions Planning, Workforce Planning
- Key differentiators:
 - Combination of supply chain domain knowledge, financial analysis and industry processes.
 - Direct experiences drawn from a number of industries - Technology, Retail, Manufacturing, Telecom and Construction.
 - Translation of advanced mathematical/statistical concepts to simple, practical solutions
 - Proprietary Forecasting and Replenishment models and tools that incorporate causal factors in specific ways
 - Engagement/deployment model that makes services available on an as-needed basis that reduces customers' total cost of ownership.
 - Consultative and iterative approach to problem solving.

Planning - Execution - Monitoring

Planning

Product Portfolio
Pricing
Forecasting
Network Definition
Sourcing

Execution

Order Fulfillment
Pull Based Replenishment
Procurement

Monitoring

Sales Analysis
Market & Trend Analysis
Cost & Margin Analysis

Planning – Execution - Monitoring – *in Telecom*

Planning

Load Forecasting
Productivity Forecasting
Capacity Planning
Risk Planning (OT vs Cust Svc)

Execution

Area Decisioning
Technician Dispatch
Overtime Management

Monitoring

Variance Analysis
(Forecast to Observed)
Trend & Spend Analysis
Refactorization and Re-
modeling

Planning – Execution – Monitoring - *in Construction*

Planning

Product Portfolio
Pricing
Forecasting
Network Definition
Sourcing

Execution

Order Fulfillment
Pull Based Replenishment
Procurement

Monitoring

Sales Analysis
Market & Trend Analysis
Cost & Margin Analysis

The Planning Domains

Product
Portfolio
Planning

Price
Planning

Material
Planning

Sourcing &
Procurement
Planning

Warehouse
&
Distribution
Planning

Post
Sales
Service
Planning

Workforce
Planning

Planning functions are scattered throughout an organization and have varying cycles - yearly, quarterly and daily. Considerations differ from industry to industry, company to company and involve factors that are often dynamic. The output of plans drive operational decisions. Planning solutions need careful evaluation of all these factors as well as the extent of the impact of best practices and technologies that govern operational execution of plans.

● Retail

● Manufacturing

● Telecom

● Construction

Trends in Planning

- Inhouse vs Outsourced
- Support for highly specific supply chain behavior
- Focus on Labor/Service as much as Material
- Solution Availability as A Service

Case Studies

- Construction Firm
 - Insourcing Strategy - Sourcing, Distribution, Manufacturing
 - Operational Planning – Material, Sourcing, Logistics, Labor
- Telecommunication Firm
 - Load Forecasting
 - Capacity Management & Workforce Optimization
- Manufacturer
 - Product Portfolio Planning for Branded Retail
 - Distribution/Network Planning

In Summary

Portfolio of Offerings

Strategic Planning

- Asset and operational efficiencies, revenue optimization
- Inventory & Cash Flow Analysis
- ROI measurements

Business Planning

- Market entry research, evaluation of multiple strategic options
- Proforma biz plans
- Workshops, detailed Operational planning

Process Planning

- Current State Analysis
- Future State Definition
- S & OP analysis, Best Practices Implementation

Technology Planning

- Technology rationalization
- Solution definition, Initiative planning
- Outsourcing strategy

Planning As A Service

- *Benefit Assessment Framework* - Web based, customizable ROI assessment tool
- *Product Portfolio Planning Service* – Trends Analysis to evaluate category and product profitability
- *Sourcing & Logistics Services* – Analyze and adjust supplier, network performance
- *Forecast Planning Service* – Forecast model tailored to specific causal factors of a business
- *Replenishment Planning Service* – Replenishment model tailored to specific constraints of a business
- *Operations Planning Service* - Comprehensive demand-supply-margins match
- *Workforce Optimization Service* - Labor forecasting and matching with budgets and customer service targets

Engagement & Service Management

- Engagement Planning and Design
- Project and Program Management
- Ongoing Service Support

Representative Projects

- New England based building materials manufacturer
 - Program to transition them into a branded marketing and distribution firm - historical sales & margins analysis, development of a private label portfolio, price modeling, establishment of sourcing & distribution network - *Efficiencies achieved in sourcing - 10%, Revenue growth anticipated - 8%*
- Large National Telecommunications Provider
 - Load forecasting and field service technicians planning across a 5 state geography for a large telecom service provider, based on weather, infrastructure and other factors, optimizing customer service targets with budgets and overtime spend. - *Decrease in labor spend by 5-8% and Increase in revenues by 1-8%*
- Large TX retailer
 - Assortment rationalization based on rates of sale, store clusters, etc for a retailer - *Decreased inventory one-time by 1%, Reduced days of inventory on average by 10%*
- Large Consumer Goods Manufacturers
 - Outsourcing of the warehousing function for a manufacturer of consumer products – *Reduced costs of warehousing - 10%, Reduced days in inventory by 15%*
 - Reengineering of the procure-to-pay process for a beverage maker, to allow for invoice-less settlements to suppliers and transportation service providers - *Reduced claims and invoice processing costs by 30%*
- Major technology manufacturer
 - Design and implementation of Demand-Supply Match solution to assist in operational decisions – *Reduced obsolescence by 20%, Tracking to Inventory Targets Improved by 50%*
- Industry Standards Organization (UCC)
 - Conceptualization and development of Business Impact Assessment Framework
 - Co-authoring of industry best practices - Collaborative Planning, Forecasting and Replenishment (CPFR) model.

Our Experience Base



MAY

THE MAY DEPARTMENT STORES COMPANY

is one of the country's leading department store companies, a \$14 billion retailer operating six quality regional department store divisions using 11 trade names and the Bridal Group.



MARKS & SPENCER



Some Closing Thoughts

- Supply Chain Planning Consulting as a profession offers excellent opportunity to learn Strategies and Operations of enterprises
- Entrepreneurship has its thrills, and challenges
- Working with a small, highly motivated group requires people with intellectual capital, energy, flexibility, and stamina (it is not a 'job'; it is more a mission and a passion)
- The knowledge dilemma. How much is enough ? While there will always be more to know, it is as important to share and apply learning for the usefulness to yourself, companies and society
- Good luck and great talking to you. Look forward to working with you.