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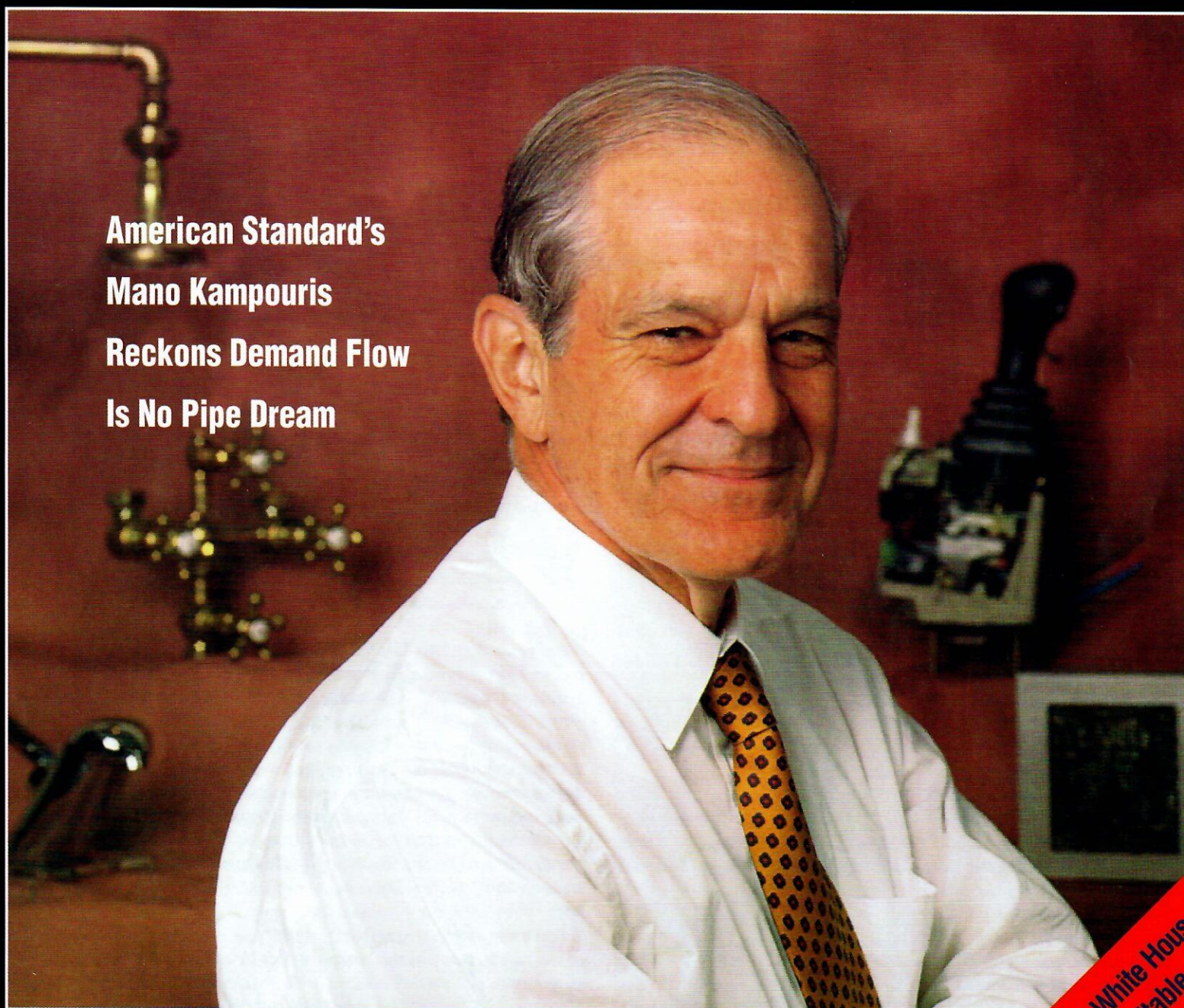
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**American Standard's  
Mano Kampouris  
Reckons Demand Flow  
Is No Pipe Dream**



**Special White House  
Roundtable**

"This guy's performance model may be a joke," American Standard Chairman and CEO Mano Kampouris told his senior lieutenants about Demand Flow Technology in February 1990. "But if it isn't, it will save us."

AMERICAN  
STANDARD  
COMPANIES

# THE MAN WHO PUTS WORKING CAPITAL

## TO WORK

When **American Standard** faced recession and imminent bankruptcy in 1990, Chief Executive **Mano Kampouris** stumbled upon a model that would ultimately save the company. Without knowing it at the time, Kampouris prefigured the re-engineered phenomenon. Now he's pushing the envelope to apply Demand Flow to the office.

It is somewhat fitting that the world's leading producer of plumbing fixtures has pinned its future on an obscure performance improvement methodology known as "Demand Flow." But for Emmanuel A. Kampouris, 61, chairman and CEO of \$5.2 billion American Standard, there was no choice. When the recession hit in 1990, American Standard was larded with \$3.2 billion in LBO-related debt—the result of warding off a hostile takeover in 1988 by Black & Decker. Facing certain bankruptcy, American Standard had \$700 million in working capital and inventories that could be tapped to pay down debt. Enter Demand Flow Technology.

The brainchild of John R. Costanza at the Costanza Institute of Technology in Englewood, CO, DFT is like just-in-time and re-engineering on caffeine: In theory, it reduces working capital by streamlining the manufacturing and supply chain processes, making the most efficient use of work, machinery, and raw materials in one continuous flow.

So in February 1990, Kampouris assembled his top lieutenants. "If Demand Flow Technology works," Kampouris told them, "it will save us. If it doesn't, we will go bankrupt." The

only trouble was, the DFT model was virtually untested. And it did not come cheap: Kampouris would have to spend about \$100 million to implement DFT in all the company's facilities—which then numbered 85 facilities in 32 countries—to achieve the efficiencies he needed to reach his goal: zero working capital by 1997.

Six years later, DFT has become the heart and soul of corporate culture at American Standard, and the courtly Kampouris becomes evangelical in describing how it has enabled inventory turns—the benchmark of plant efficiency American Standard uses for DFT—to increase from three times to nearly 11. Working capital has been reduced from 8.6 percent of sales to less than 5 percent—an impressive figure when compared with the average at U.S. companies: about 15 percent. Even Jack Welch & Co. has taken cues from 57-year-old American Standard, dispatching a troop of GE managers to the company's Piscataway, NJ, headquarters for lessons on the finer points of DFT.

For its next trick, American Standard will apply the same model of efficiency to the company's white-collar operations—assigning value to specific office tasks, which then can be mea-

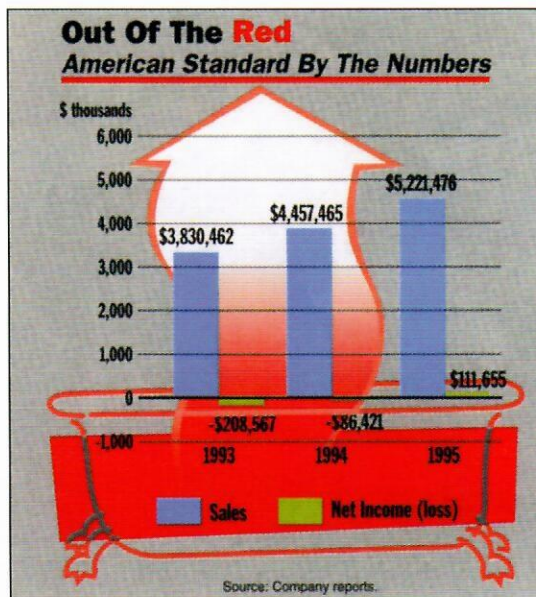
sured and reconfigured to squeeze out as much waste as possible. (For his part, Kampouris allows that DFO—Demand Flow in the Office—is still a work in progress: “It’s much more difficult than in manufacturing.”)

American Standard’s transformation hasn’t been without speed bumps. Between 1991 and 1994, while sales in two of three of the company’s businesses—air conditioning, plumbing, and automotive parts—increased at a steady clip, the company still lost more than \$300 million. Last year, after going public in May with an IPO that raised \$270 million, the company turned its first profit since the LBO, with net income of about \$112 million. The Egyptian-born, Oxford-educated Kampouris allows that the one mistake he and his team made was not factoring in the recession. “Without that,” he says with a rueful smile, “we would have been all right.”

It’s just as well, since what Kampouris stumbled upon—DFT—put American Standard on a warp-speed course for the next century. Since the public offering, which gave American Standard a market capitalization of \$2.7 billion, Kampouris has set lofty performance goals, including zero working capital, 15x inventory turns, a 15 percent operating margin, and \$10 billion in consolidated sales by 2000. Kampouris reckons these goals can only be achieved by expanding globally (fully \$1 billion in sales will come from China by 2001, Kampouris says), by adding more products to existing lines in all three businesses, and quite possibly adding a fourth business that could offer synergy to one or more of the others. The outlook, especially for global expansion of the plumbing and air-conditioning businesses, looks promising as emerging countries invest in commercial buildings and infrastructure.

Kampouris, who takes inspiration from such Old Testament figures as Nehemiah and Joseph, shuns his corporate titles by listing himself as “corporate leader” on his business card. He points to the open-air cubicles for almost all American Standard’s white-collar staff as one key to efficiency. Another is an electronic billboard that flashes daily updates of inventory turns, working capital, and product sales.

What legacy would Kampouris like to leave at American Standard? “I’d like to leave an organization that is humble and upholds standards. One that has wisdom and that does right,” he says. But given the fact that American Standard’s stock price has increased eightfold



since the company’s LBO in 1988 and 22 percent of the company is employee-owned through an ESOP, Kampouris can’t resist adding: “And by the year 2000, I’d like to have created at least a thousand new millionaires.”

—Frances Nuelle

## GO WITH THE FLOW

### What is Demand Flow Technology and how did it change your thinking?

It was the \$3.2 billion of debt after the LBO that changed my thinking. We borrowed the money, and our investment bankers projected that two or three years down the road, we would refinance to pay down the debt, and everything would be wonderful. But we were proved wrong in our underlying assumptions that the market would hold up. From ‘89 to ‘92, it was a disaster as the market collapsed. All our businesses went into recession in tandem. If that had not happened, we would have been OK: We would have sold about \$700 million worth of assets to pay debt. When we saw the first clouds on the horizon, we had already sold everything we could. The only asset we had worth anything was about \$700 million in working capital, of

which \$600 million was in inventory. I sent the fellow who was then running MIS out—to Japan, to Europe, to wherever—to find techniques that could minimize our working capital. Six months later, he came back with a small consulting firm that had a good methodology.

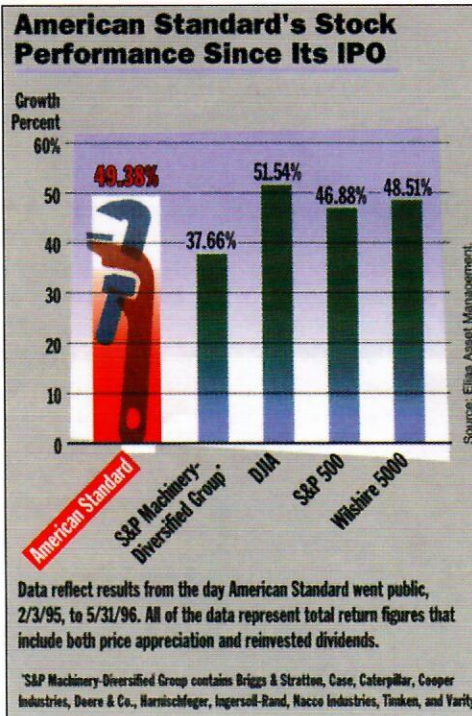
This methodology entailed re-engineering the manufacturing facilities, similar to taking out all the furniture in your house and putting it back in a different way. The consultant said, “If you do this, you’ll shorten your cycle time.” Then he said the magic words: “You will at least halve your inventories, maybe reduce them by 70 percent.” He was not selling inventory reduction but a methodology that would enhance customer service, improve quality, and reduce costs. And incidentally, it also would reduce inventory. So I told him to do a test. He said, “We’re already working in the corner of one of your facilities in Texas.” And sure enough when we looked at it as a microcosm of a factory, it was doing what he proposed it would do.

### So it gave you confidence?

One factory doesn’t mean anything. But we had no choice. So I called all our operations people together—it was in February 1990—and I said, “If we go through a recession, we will be bankrupt; there’s no way we could service our debt. This guy’s model may be a joke—but if it works, it will save us.” I looked at everyone and said, “Everybody agrees? Fine. Sign in blood.”

We set targets of doubling our turns in three years, which meant we halved our inventories in three years. Why double? It sounded good at the time. We made sure our long-term incentive program for all the officers was tied to doubling our turns, and we put another thousand people on a similar incentive program which we call TNT—twice net turns.

To make a long story short, in three years, we saved about \$600 million that was idle on our balance sheet and we used that money to avoid



bankruptcy and save the company.

### How much did this process cost?

About \$100 million of expenses. The rearrangement process doesn't require capital, because you just rearrange what you have. The idea is this: I'm making ping-pong balls, and I need 100 of them tomorrow—10 each in 10 colors. The day after tomorrow, I only need 50 in two colors. The day after that, I need 90 in 10 colors. You should be able to be flexible enough to make these without batting an eye. In the old days, you couldn't flex production up and down. Here, you change your manufacturing process every day, every hour, or, in theory, any time. If you're buying supplies, you have to keep informing your suppliers about what you're doing on a daily basis.

### What told you how to redo these processes?

It is a generic methodology. You look at the sequence of events, the required labor, machine set-up time, and you measure every piece of work. You do total time calculations. Then you look at the process design efficiency. Any idle raw material—any time that is not spent making this thing—is wasted time. You look at machine time, set-up time, movement, and you analyze it meticulously for every product, every SKU in the factory. The entire process changes the company's mentality, because the costing changes. Now, I can cost based on the speed it takes for the product to go through and how much overhead it absorbs instead of allocating overhead according to labor.

Here's an example: Today, I'm going to produce 100 on this line, which is designed for 100 plus or minus 20 percent. If I want to make more than 100, I just add people. If I want fewer than 100, I take people away. Someone works in one or two positions, called "one up, one down." So if I'm a worker, and we're working at the low capacity of the line, I have more than one job: I do assembly, I move up one position to do the next job, and maybe the one after that. So the whole team sees the total product, and it changes the whole atmosphere.

Now we've taken the concept into the office. In a factory, you have raw materials being processed through good equipment and people. In the office, you take paper or information, process it, and transform it into an invoice, a balance sheet, a P&L statement. So we are developing DFO: Demand Flow in the

Office.

### What do you use as benchmarks in the office?

Productivity, but in the office it's more difficult than in manufacturing. We're trying to get total productivity to 7 percent per annum.

### How do you measure productivity?

We measure it by sales divided by the cost of labor. Some people say, "How many sales

lion to \$50 million a year. We used to spend \$100 million. And there's a limit to how much debt you want to pay down.

### What are your plans for the future?

Our most global business now is plumbing. The least global is air-conditioning, and even there we've expanded rapidly. And we've expanded rapidly with the automotive business. So we're trying to make each business as

global as possible; that offers growth and also mitigates the cyclicality. The next thing we want is to enhance our market share. Now we have strong market shares throughout all of our businesses, and we want to leverage our market shares to expand our product lines in each business. We've set the goal of \$10 billion in sales by the year 2001, and by 1998-1999, about \$1 billion in income. We will need an acquisition that would enhance our position in one or more of our businesses on a global basis. And we've also thought of adding a fourth leg to our business, as well.

### What markets are strategically important to you?

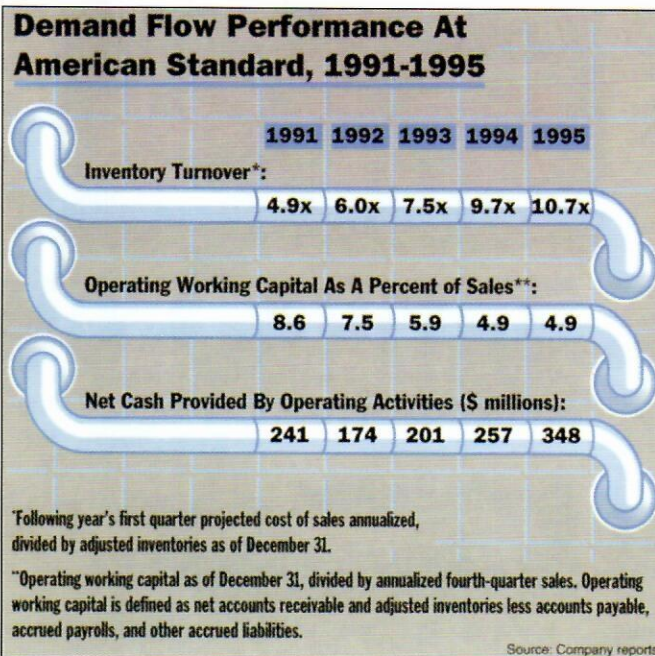
The Far East. After that, Eastern Europe. In time, Poland certainly will be attractive. Or Romania and

Hungary. And Russia. Mainly for all our plumbing lines, since Europe doesn't use as much air-conditioning because of the climate. We nearly signed an agreement in Russia but didn't because we were afraid of the political situation at this time. In general, we're seeing some signs that these countries are becoming economically viable. India's certainly another market where we're looking again. Our latest joint venture's in Vietnam in our plumbing business.

## GLOBAL OUTLOOK

### Do you manage differently because you were not born in the U.S.?

Maybe, in that I think I tend to be a little more global in my outlook than perhaps a U.S. CEO, since I've lived and worked in three or four countries. And it's important that one's senior staff be reflective of the company—some 50 percent of our operating people are non-U.S. That way, people come together and have free-wheeling discussions in which they speak their minds. Then you can make wiser decisions. □



per dollar or head?" But the head may cost me very much. I need to make sure the cost of labor is lower so I can get higher productivity. If my sales this year are \$10, my labor cost is \$1, and I say, "Now I'm going to double my productivity next year, so I'm going to build \$20 worth of sales with that one person." But if that person triples in value, I'm not getting the same productivity value.

So I'm looking at labor productivity—whether it is internal or whether I'm farming it out—because you can improve productivity if you farm some of this stuff out.

### How do you decide what to farm out?

Every business is different. In plumbing, we hardly farm anything out. In the air-conditioning business, we don't make our own motors, but we make our own compressors, but we buy a lot of the small assembly operation. Automotive, too.

## STRATEGIC THINKING

### Now that you're no longer struggling, what are you able to do strategically?

First, we want to continue to improve our balance sheet. But our capital expenditures have come down—we're spending \$20 mil-